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ABSTRACT

The Formative Evaluation and Heuristic Research (FEHR) PRACTICUM, a computerized game, gives practical experience in such program evaluation tasks as problem definition, operationalizing objectives, field study, budgeting, proposal writing, data analysis, and interpretation--without the expense and time commitments required by most research. The players, graduate students or practicing professionals, design and conduct an experiment comparing the effectiveness of available educational programs on students in a mythical school district. As a "research assistant," the computer can identify individuals or groups of students by category (test score, grade, sex), apply educational programs, and administer and score tests which determine the effects of a program over time. There is no predetermined decision; rather, the results of each team are critically evaluated and methodological implications are discussed. The available simulations study preschool to college level populations, and include empirical evaluations of related research. The Request for Proposals (RFP) is presented for each evaluation problem included in this document: Perceptual Handicaps, Remedial Arithmetic, Extended School Year, Early Childhood Education, Validation of a Teacher Questionnaire, Remedial Math for Adults, and Busing to Achieve Integration. Each RFP includes an identification of the content area and grant sponsor, a general narrative description of the problem, and a checklist of tasks to be performed at the game manager's option. The Appendices include details on the research population, educational programs, and available tests. (CP)

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FEHR - PRACTICUM

Request For Proposals

For

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PERCEPTUAL HANDICAPS (PEP)

RFP001

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TM 006 957

2/3

FEHR-PRACTICUM REQUEST FOR PROPOSALS (RFP)
RFP001:PERCEPTUAL HANDICAPS

The Fair City Board of Education is soliciting proposals for the field evaluation of several programs for elementary students who are perceptually handicapped. Specific details of the content to be investigated are given in the attached problem description.

In general, projects will be funded in two separate phases. In phase I, a team is awarded a planning grant which will enable them to explore the extent and severity of the problem and to develop a proposal for an experimental study of the effects of the two available remedial programs as compared to present classroom practice. When an adequate proposal has been developed, the team will then be funded for phase II, in which they actually carry out the proposed research. A detailed description of the specific form and contents of the request for a planning grant and the research proposal are given in the Players' Instructions. In either case, the level of funding is subject to negotiation with the game manager.

A detailed description of the tasks involved in each phase of the project is provided in the INSTRUCTIONS section of the FEHR-PRACTICUM Players' Handbook. However, the time available and the needs of the players involved in a particular game vary from location to location. For that reason, the projects which may be funded under this RFP will vary widely in their scope, complexity, and degree of sophistication. The level of complexity expected from your team for this particular problem is specified in the itemized list of the work to be accomplished which appears later in this document.

The remainder of this RFP document is organized into three sections. The first section, entitled Problem Description, provides an overview of the problem, and describes the particular treatments (programs), research subjects, and variables which may be used in your study. In addition, it provides specific references to various sources of additional information. The second section provides a detailed list of the tasks to be performed by your team. The third section is a set of appendices providing detailed data on the various components described in section I. A table of contents appears at the beginning of this section.

PROBLEM DESCRIPTION: PERCEPTUAL HANDICAPS

The Problem: The staff of Fair City elementary schools has become increasingly concerned about a number of students with normal intelligence, hearing, and vision who are having difficulty understanding spoken or written language. The staff has tentatively identified these children as "perceptually handicapped." At the present time there is no special program for these children. However, there is a great deal of interest in providing some services for them.

Recently, a committee of teachers studied the nature and extent of the problem and proposed two treatment programs. The details of the report appear in Appendix V, page 25, of this description. Support is available for a study to determine whether either of the proposed methods is better than present practice, and whether all handicapped students should have the same remedial treatment. Because a decision must be made in the near future, the proposed study may not extend beyond one semester (15 weeks).

The Research Population: The research population will be composed of grades k through 3 of the Jackandjill elementary school. This school was chosen because the staff was particularly concerned about the problem and very supportive of the experiment. These grades were chosen because it was felt that intervention during this period of development would be most beneficial in terms of academic and emotional growth. Secondly, the experiment has been limited to these grades by the Board of Education for financial reasons. A complete listing of the research population appears in Appendix II.

Available Variables: There are 161 variables which you can "measure" in this problem. These include achievement tests, IQ tests, perceptual tests, personality tests, social indices, additudinal indices, etc. A complete listing of the available variables appears in Appendix IV.

Available Treatments: In addition to present practice, there are two treatments available for implementation.

(a) The Visual Perceptual Motor Program (VPM for short) requires that children be placed in a special self-contained classroom. The VPM focuses on the development of visual motor and perceptual skills by emphasizing the use of special non-academic materials that will foster coordinated motor and perceptual activities.

(b) The Specific Learning Disabilities Program (SLD for short) takes the perceptually handicapped children out of their regular classrooms for only 30 minutes a day. While in a resource room, all the children are given specific non-academic training in the areas of language, perceptual and motor development.

Note: For more details see the ad-hoc committee's report in Appendix V, page 25.

Previous Research: Reports of previous research concerning the proposed program are available in the Information Bank. See Appendix I for a list of titles.

CHECKLIST OF TASKS TO BE PERFORMED

Since the work to be accomplished under this RFP varies from location to location, your Game Manager has placed a ( ) before the particular items for which your team is responsible in the PRACTICUM. (If no items are checked, see your Game Manager before proceeding.) A detailed explanation of how to accomplish each task appears in the Instructions section on the page indicated at right. Tasks marked with an asterisk (*) are mandatory in every PRACTICUM. Before beginning, each player should study, interrelate, and synthesize the information contained in the RFP, its various appendices, and the relevant parts of the Fair City Booklet.

Assigned Tasks		Description of Task	Instructions Page
__*__	(1)	Each player should submit an Orientation Questionnaire to the Game Manager. The specific question to be answered are in the INSTRUCTIONS.	1
__*__	(2)	Form teams as directed by the Game Manager. The following assignments and requirements apply throughout this PRACTICUM: Team salary: $_____ per day. Costs are to be paid as indicated below: ___(a) ignore all costs ___(b) pay costs by check ___(c) pay costs with computer receipts Requests for file searches, survey and treatments should be: ___(a) entered by the team via PROMPTS ___(b) entered by the team via punch cards ___(c) written on the appropriate form and submitted to the Game Manager A Log of research activities: ___(a) to be kept by each player ___(b) to be kept by each team ___(c) no long necessary	1
__*__	(3)	Operationalize the problem observing the following restrictions: Literature: ___no review necessary ___Information Bank only ___Information Bank and regular library Definition: ___Problem definition provided by Game Manager ___complete problem definition form	3-5

Assigned Tasks		Description of Task	Instructions Page
_____	(4)	Determining Extent and Severity of the Problem ___4.1 Submit a Request for a Planning Grant on the form provided Due Date:________________________ Maximum Grant $_________________ ___4.2 Run File Search and/or Survey Maximum sample size:___________ Maximum number of variables____ (___independent; ___dependent) ___4.3 Analyze the data from 4.2 using appropriate statistical procedures ___4.4 Formal Problem Description (first draft). To be presented for critiquing by the other teams on (date)__________________________	5-7
_____	(5)	Funds are available for identifying a Pool of Research Subjects for Treatments ___Yes; ___No	7
_____	(6)	Empirical Evaluation of the Education Treatments ___6.1 Submit a Research Proposal to the Game Manager. The proposal must meet these restrictions and requirements: Maximum number of variables per observation: Dependent_____; Independent_____; Total_____ Maximum number of observation times_____ Maximum number of research subjects _____ Date proposal must be submitted_____ The maximum project budget is: $_____ The proposal should contain each item checked below: ___(a) abstract of the proposal ___(b) introduction and overview of problem	7-9

Assigned Tasks	Description of Task	Instructions Page

___(c) a review of the related literature from:
    ___the Information Bank only
    ___both the Information Bank and library
___(d) a formal statement of the problem
___(e) a description of the procedures to be used
___(f) a schedule of activities
___(g) an itemized budget

The writing style for the proposal is checked below:

___(a) brief outline
___(b) detailed outline
___(c) formal narrative

___6.2 Using an appropriate method, divide your sample into treatment groups, observing the restrictions given in Task 3. Run the experiment on the FEHR Data Generator. Data will be output on:

___(a) printed copy only
___(b) printed copy and punch cards
___(c) printed copy and the team's computer file

___6.3 Analyze and interpret the data from Step 6.2 using appropriate statistical procedures. Record restrictions (to be announced by the Game Manager) below:

___6.4 Submit a final report to the Game Manager. The report should contain the proposal items checked in 6.1 plus the items checked below:

___(h) the results of the field test
___(i) a summary of the statistical findings
___(j) a discussion of results culminating in an educational decision
___(k) a discussion of the limitations of the project

Assigned Tasks	Description of Task	Instructions Page
	___(l) recommendations for future research ___(m) an appendix containing the log(s) of activities The writing style of the final report should be: ___(a) brief outline ___(b) detailed outline ___(c) formal narrative Final report due date:____________	
_____ (7)	Attend a Consolidation Session (at a time to be announced by the Game Manager) to discuss the strengths and weaknesses of the strategies employed by your team, and any other teams which are attacking the same problem	9

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APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 1
PERCEPTUAL HANDICAPS

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Bender-Gestalt Test.

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California Test of Personality.

Columbia Mental Maturity Scale.

Deutsch Socio-Economic Status Index

Film Test of Visual Perception.

Frostig Developmental Test of Visual Perception.

Gates-MacGinitie Readiness Skills Test.

Goodenough Draw-a-Man Test.

Illinois Test of Psycholinguistic Abilities (ITPA).

Leiter International Performance Scale.

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Lorge-Thorndike Intelligence Scale.

Metropolitan Achievement Test.

Metropolitan Readiness Tests.

Otis Quick-Scoring Mental Ability Test.

Otis-Lennon Mental Ability Test.

Peabody Picture Vocabulary Test.

Purdue Perceptual-Motor Survey.

Raven Progressive Matrices.

Stanford Achievement Tests.

Stanford-Binet Intelligence Scale.

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RESEARCH POPULATION: APPENDIX II

The research population for the Perceptual Handicaps (PEP) problem consists of all the students in kindergarten through Grade 3 who are enrolled in the Jackandjill Elementary School. Each of these students has an I.D. consisting of three sections. The first two digits from the left determine the grade, the next two digits determine the class and the last three digits determine the individual child. For example, 04-03-021 identifies kindergarten, class 3 and the 21st person, or, to put it another way, the 21st person in class 3 in kindergarten. The hyphens are used here only for clarity. When entering this student's I.D. into the computer, one would type 0403021. If you want to measure all the students in a class, all you have to do is enter zeroes in the spot for individual digits. For example, 0102000 would provide the variable score for all students in the second class of the first grade. This is entered into the computer as one I.D., so that when you enter this I.D. in the computer it represents one of the I.D. numbers allotted to a line but you receive the results for the whole class. There are 426 separate student I.D. numbers in the research population for this problem as listed below.

Grade	Grade or Unit Index	Class or Sub-Unit Index	Class Enrollment	Student I.D.'s Available in Class
Kindergarten	04	01	26	04-01-001 to 04-01-026
		02	25	04-02-001 to 04-02-025
		03	26	04-03-001 to 04-03-026
		04	25	04-04-001 to 04-04-025
One	01	01	35	01-01-001 to 01-01-035
		02	35	01-02-001 to 01-02-035
		03	34	01-03-001 to 01-03-034
Two	02	01	34	02-01-001 to 02-01-034
		02	34	02-02-001 to 02-02-034
		03	34	02-03-001 to 02-03-034
Three	03	01	30	03-01-001 to 03-01-030
		02	30	03-02-001 to 03-02-030
		03	29	03-03-001 to 03-03-029
		04	29	03-04-001 to 03-04-029

CATALOG OF TREATMENTS: APPENDIX III

TREATMENT INDEX	TREATMENT NAME	TREATMENT DESCRIPTION	FIXED OVERHEAD COST OF SETTING UP PROGRAM	FIXED COST PER PUPIL ENTERING THE PROGRAM	WEEKLY COST FOR MAINTAINING THE PROGRAM	WEEKLY COST FOR MAINTAINING EACH PUPIL IN PROGRAM
01	Present practice	Students remain in their regular classes	$0.00	$0.00	$0.00	$0.00
02	Plan A-VPM (Visual Perceptual Motor Program)	This treatment puts children in a special class all day for thorough perceptual motor training	$1000.00	$50.00	$200.00	$25.00
03	Plan B-SLD (Specific Learning Disabilities Program)	This treatment takes children out of their regular class for 30 minutes daily for specific perceptual, language & motor training	$800.00	$10.00	$20.00	$5.00

Treatment Times. The time units in this problem are weeks. Time 00 represents the first day of class, time 1 the end of the first week of class and so on. Treatments may be administered for any week from 00 to 15, inclusive, although tests cannot be administered more than nine times during a treatment.

Observation Times or Testing Times. This refers to the time at which a particular set of variables are observed during a treatment. The observation times available in this problem are 00, 01, 02 ... 15.

Note: The costs listed above do not include per/person test costs, although those costs will be included in the assessed charge when tests are given during treatments. (See Catalog of Variables for these costs.) There are no other overhead costs for administering tests during treatments.

CATALOG OF VARIABLES: APPENDIX IV

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Types of Variables

I. ABILITY AND INTELLIGENCE VARIABLES
II. ACHIEVEMENT VARIABLES
III. READING ACHIEVEMENT AND READINESS VARIABLES
IV. PSYCHOLINGUISTIC VARIABLES
V. VISUAL AND AUDITORY PERCEPTUAL VARIABLES
VI. PERSONALITY VARIABLES
VII. PERSONAL HISTORY VARIABLES
VIII. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS
IX. TEACHER EVALUATION OF STUDENTS

Note 1: The category, GRADE AVAILABLE, indicates at which grade level the test can be administered.

Note 2: The category, AVAILABLE ON: FILE SURV TREAT, identifies the process by which each individual variable can be retrieved. That is, if there is a "YES" under FILE, the variable can be retrieved via a File Search. If there is a "YES" under SURV, the variable can be measured via a survey. If there is a "YES" under TREAT, the variable can be measured during a treatment.

Note 3: The category, PRICE/PERSON, indicates costs of variable scores measured via survey and during treatment ONLY. If the variable is retrieved via File Search, the cost/variable/person is ALWAYS 5¢

Note 4: Unless otherwise stated, assume that all data in the files were collected during registration before classes started.

Note 5: Assume that all survey data is collected at time 00, which is the first day of classes. Likewise, all data collected during a treatment at time 00 would be for the first day of classes.

Note 6: Assume that teacher evaluations of the student are made by the teacher with whom the student is spending the majority of the school day at any given testing time.

LIST OF COSTS THAT MAY BE INCURRED IN THIS PROBLEM

File Search

1.	Fixed overhead charge for initiating a search	$20.00
2.	Overhead costs of entering sub-unit files	$ 5.00/sub-unit
3.	Overhead costs of entering units	$ 0.00/unit
4.	Cost of variable scores	$ 0.05/variable/ person in all cases

Survey

1.	Fixed overhead charge for initiating a search	$20.00
2.	Overhead costs of administering tests to sub-units	$ 5.00/sub-unit
3.	Overhead costs of entering units	$ 0.00/unit
4.	Cost of variable scores	See Catalog of Variables

Secretary

1.	Fixed overhead costs for initiating use of secretary	$10.00
2.	Cost of secretary per student	$ 0.10

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
1. ABILITY AND INTELLIGENCE VARIABLES						
California Test of Mental Maturity:Verbal I.Q. (CTMM VRBL IQ) Numbers are SCALED SCORES.	k-3	27	NO	YES	YES	.20
California Test of Mental Maturity:Non-Verbal I.Q. (CTMM NON- VRBL) Numbers are SCALED SCORES.	k-3	28	NO	YES	YES	.20
Columbia Mental Maturity Scale (CMMS IQ) Numbers are SCALED SCORES.	k-3	32	NO	YES	YES	3.00
Goodenough Draw-A-Person Test (DRAW AMAN IQ) Numbers are RAW SCORES.	k-3	31	NO	YES	YES	1.70
Leiter International Performance Scale (LIPS) Numbers are SCALED SCORES.	k-3	29	NO	YES	YES	7.75
Lorge-Thorndike IQ Test:Non-Verbal (LORG NON- VRBL) Numbers are RAW SCORES.	k-2	35	NO	YES	YES	.20
Otis Lennon Mental Ability Test (OTIS LNON IQ) Numbers are SCALED SCORES.	K-3	34	NO	YES	YES	.30
Otis Quick Scoring Ability Test (OTIS IQ) Numbers are SCALED SCORES.	1-3	36	YES	YES	YES	.25
Peabody Picture Vocabulary Test (PPVT) Numbers are SCALED SCORES.	k-3	30	NO	YES	YES	2.25
Raven Progressive Matrices (RAVN PROG MATR) Numbers are SCALED SCORES.	1-3	33	YES	YES	YES	5.00
Stanford-Binet (S-B) Numbers are SCALED SCORES.	k-3	26	NO	YES	YES	12.65
Wechsler Intelligence Scale for Children:Information (WISC INFO) Numbers are SCALED SCORES.	k-3	37	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Comprehension (WISC COMP) Numbers are SCALED SCORES.	k-3	33	NO	YES	YES	.80

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CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE PERSO
Wechsler Intelligence Scale for Children:Arithmetic (WISC MATH) Numbers are SCALED SCORES.	k-3	39	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Similarities (WISC SIML) Numbers are SCALED SCORES.	k-3	40	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Vocabulary (WISC VCAB) Numbers are SCALED SCORES.	k-3	41	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Digit Span (WISC DGIT SPAN) Numbers are SCALED SCORES.	k-3	42	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Picture Completion (WISC PCTR CMPL) Numbers are SCALED SCORES.	k-3	43	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Picture Arrangement (WISC PCTR ARNG) Numbers are SCALED SCORES.	k-3	44	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Block Design (WISC BLOC DSGN) Numbers are SCALED SCORES.	k-3	45	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Object Assembly (WISC OBJ ASMB) Numbers are SCALED SCORES.	k-3	46	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Coding (WISC CODE) Numbers are SCALED SCORES.	k-3	47	NO	YES	YES	.80
Wechsler Intelligence Scale for Children:Mazes (WISC MAZE) Numbers are SCALED SCORES.	k-3	48	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Information (WPSI INFO) Numbers are SCALED SCORES.	k,1	49	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Vocabulary (WPSI VCAB) Numbers are SCALED SCORES.	k,1	50	NO	YES	YES	.80

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CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE PERSON
Wechsler Preschool and Primary Scale of Intelligence: Arithmetic (WPSI MATH) Numbers are SCALED SCORES.	k,1	51	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Similarities (WPSI SIML) Numbers are SCALED SCORES.	k,1	52	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Comprehension (WPSI COMP) Numbers are SCALED SCORES.	k,1	53	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Sentences (WPSI SENT) Numbers are SCALED SCORES.	k,1	54	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Animal House (WPSI ANML HOUS) Numbers are SCALED SCORES.	k,1	55	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Picture Completion (WPSI PCTR CMPL) Numbers are SCALED SCORES.	k,1	56	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Mazes (WPSI MAZE) Numbers are SCALED SCORES.	k,1	57	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Geometric Design (WPSI GEOM DSGN) Numbers are SCALED SCORES.	k,1	58	NO	YES	YES	.80
Wechsler Preschool and Primary Scale of Intelligence: Block Design (WPSI BLOC DSGN) Numbers are SCALED SCORES.	k,1	59	NO	YES	YES	.90
2. ACHIEVEMENT VARIABLES						
Metropolitan Achievement Tests: Reading (MAT READ) Numbers are RAW SCORES.	1,3	145	NO	YES	YES	.20
Metropolitan Achievement Tests: Word Knowledge (MAT WORD KNOW) Numbers are RAW SCORES.	1-3	143	NO	YES	YES	.20

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CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE PERSO
Metropolitan Achievement Tests: Spelling (MAT SPEL) Numbers are RAW SCORES.	3	145	NO	YES	YES	.20
Metropolitan Achievement Tests: Mathematical Computation (MAT MATH COMP) Numbers are RAW SCORES.	3	148	NO	YES	YES	.20
Metropolitan Achievement Tests: Problem Solving and Concepts (MAT PROB SOLV) Numbers are RAW SCORES.	3	147	NO	YES	YES	.20
Metropolitan Achievement Tests: Concepts and Skills (MAT MATH C&S) Numbers are RAW SCORES.	1-3	149	NO	YES	YES	.20
Metropolitan Achievement Tests: Word Discrimination (MAT WORD DISC) Numbers are RAW SCORES.	2,3	144	NO	YES	YES	.20
Stanford Achievement Test: Paragraph Meaning (SAT PARA MEAN) Numbers are RAW SCORES.	1-3	130	YES	YES	YES	.30
Stanford Achievement Test: Spelling (SAT SPEL) Numbers are RAW SCORES.	1-3	131	YES	YES	YES	.30
Stanford Achievement Test: Word Meaning (SAT WORD MEAN) Numbers are RAW SCORES.	1-3	132	YES	YES	YES	.30
Stanford Achievement Test: Word Study Skills (SAT WORD STDY) Numbers are RAW SCORES.	1-3	133	YES	YES	YES	.30
Stanford Achievement Test: Language (SAT LANG) Numbers are RAW SCORES.	2,3	134	YES	YES	YES	.30
Stanford Achievement Test: Arithmetic (SAT MATH) Numbers are RAW SCORES.	1	135	YES	YES	YES	.30
Stanford Achievement Test: Arithmetic Computation (SAT MATH COMP) Numbers are RAW SCORES.	2,3	136	YES	YES	YES	.30
Stanford Achievement Test: Arithmetic Concepts (SAT MATH CONC) Numbers are RAW SCORES.	2,3	137	YES	YES	YES	.30

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VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Stanford Achievement Test:Science and Social Studies (SAT SCI &SS) Numbers are RAW SCORES.	2,3	138	YES	YES	YES	.30
Stanford Achievement Test:Vocabulary (SAT VCAB) Numbers are RAW SCORES.	1	139	YES	YES	YES	.30
Wide Range Achievement Test:Reading (WRAT READ) Numbers are RAW SCORES.	k-3	140	NO	YES	YES	1.75
Wide Range Achievement Test:Spelling (WRAT SPEL) Numbers are RAW SCORES.	k-3	141	NO	YES	YES	1.75
Wide Range Achievement Test:Math (WRAT MATH) Numbers are RAW SCORES.	k-3	142	NO	YES	YES	1.75
3. READING ACHIEVEMENT AND READINESS VARIABLES						
Gates MacGinitie Readiness Skills Test:Listening Comprehension (G-MC REDI L-C) Numbers are RAW SCORES.	k,1	60	NO	YES	YES	.05
Gates MacGinitie Readiness Skills Test:Auditory Discrimination (G-MC REDI A-D) Numbers are RAW SCORES.	k,1	61	NO	YES	YES	.05
Gates MacGinitie Readiness Skills Test:Visual Discrimination (G-MC REDI V-D) Numbers are RAW SCORES.	k,1	62	NO	YES	YES	.05
Gates MacGinitie Readiness Skills Test:Following Directions (G-MC REDI F-D) Numbers are RAW SCORES.	k,1	63	NO	YES	YES	.05
Gates MacGinitie Readiness Skills Test:Letter Recognition (G-MC REDI L-R) Numbers are RAW SCORES.	k,1	64	NO	YES	YES	.05
Gates MacGinitie Readiness Skills Test:Visual Motor Coordination (G-MC REDI V-MC) Numbers are RAW SCORES.	k,1	65	NO	YES	Y[illegible]	.05

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CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE PERSO
Gates MacGinitie Readiness Skills Test: Auditory Blending (G-MC REDI A-B) Numbers are RAW SCORES.	k,1	66	NO	YES	YES	.0
Gates MacGinitie Readiness Skills Test: Word Recognition (G-MC REDI W-R) Numbers are RAW SCORES.	k,1	67	NO	YES	YES	.0
Metropolitan Readiness Test: Word Meaning (MTRO REDI WORD) Numbers are RAW SCORES.	1	68	NO	YES	YES	.1
Metropolitan Readiness Test: Information (MTRO REDI INFO) Numbers are RAW SCORES.	1	69	NO	YES	YES	.1
Metropolitan Readiness Test: Numbers (MTRO REDI NMBR) Numbers are RAW SCORES.	1	70	NO	YES	YES	.1
Metropolitan Readiness Test: Sentences (MTRO REDI SENT) Numbers are RAW SCORES.	1	71	NO	YES	YES	.1
Metropolitan Readiness Test: Matching (MTRO REDI MTCH) Numbers are RAW SCORES.	1	72	NO	YES	YES	.1
Metropolitan Readiness Test: Copying (MTRO REDI COPY) Numbers are RAW SCORES.	1	73	NO	YES	YES	.1
4. PSYCHOLINGUISTIC VARIABLES						
Illinois Test of Psycholinguistic Abilities: Auditory Decoding (ITPA AUD DCOD) Numbers are RAW SCORES.	k-3	119	NO	YES	YES	1.0
Illinois Test of Psycholinguistic Abilities: Auditory Vocal Association (ITPA AUDV ASSN) Numbers are RAW SCORES.	k-3	120	NO	YES	YES	1.0
Illinois Test of Psycholinguistic Abilities: Auditory Vocal Automatic (ITPA AUDV AUTO) Numbers are RAW SCORES.	k-3	121	NO	YES	YES	1.0
Illinois Test of Psycholinguistic Abilities: Auditory Vocal Sequencing (ITPA AUDV SQNC) Numbers are RAW SCORES.	k-3	122	NO	YES	YES	1.0

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VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Illinois Test of Psycholinguistic Abilities:Vocal Encoding (ITPA VOCL ENCD) Numbers are RAW SCORES.	k-3	123	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Decoding (ITPA VISL DCOD) Numbers are RAW SCORES.	k-3	124	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Motor Association (ITPA VISM ASSN) Numbers are RAW SCORES.	k-3	125	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Motor Sequencing (ITPA VISM SQNC) Numbers are RAW SCORES.	k-3	126	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Motor Encoding (ITPA MOTR ENCD) Numbers are RAW SCORES.	k-3	127	NO	YES	YES	1.00
5. VISUAL AND AUDITORY PERCEPTUAL VARIABLES						
Bender Gestalt (BNDR GES TALT) Numbers are RAW SCORES.	k-3	129	NO	YES	YES	1.70
Film Test of Visual Perception:Spatial Orientation (FILM SPCE ORNT) Numbers are RAW SCORES	k-3	109	YES	YES	YES	1.75
Film Test of Visual Perception:Form Identification (FILM FORM ID) Numbers are RAW SCORES.	k-3	110	YES	YES	YES	1.75
Film Test of Visual Perception:Moving Slot (FILM MOVE SLOT) Numbers are RAW SCORES.	k-3	111	YES	YES	YES	1.75
Film Test of Visual Perception:Figural Memory Span (FILM FGUR SPAN) Numbers are RAW SCORES.	k-3	112	YES	YES	YES	1.75
Film Test of Visual Perception:Temporal Memory Span 1 (FILM TEMP MEM1) Numbers are RAW SCORES.	k-3	113	YES	YES	YES	1.75
Film Test of Visual Perception:Pathfinder (FILM PATH FIND) Numbers are RAW SCORES.	k-3	114	YES	YES	YES	1.75

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CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE PERSO
Film Test of Visual Perception: Embedded Figures (FILM EMBD FGUR) Numbers are RAW SCORES.	k-3	115	YES	YES	YES	1.75
Film Test of Visual Perception: Successive Figures (FILM SUCS FGUR) Numbers are RAW SCORES.	k-3	116	YES	YES	YES	1.75
Film Test of Visual Perception: Driving Test (FILM DRVE TEST) Numbers are RAW SCORES.	k-3	117	YES	YES	YES	1.75
Film Test of Visual Perception: Temporal Memory Span 2 (FILM TEMP MEM2) Numbers are RAW SCORES.	k-3	118	YES	YES	YES	1.75
Frostig Developmental Test of Visual Perception: Eye-Motor Coordination (FROS EYEM CORD) Numbers are RAW SCORES.	k-2	104	YES	YES	YES	.30
Frostig Developmental Test of Visual Perception: Constancy of Shape (FROS CONS SHPE) Numbers are RAW SCORES.	k-2	105	YES	YES	YES	.30
Frostig Developmental Test of Visual Perception: Spatial Relationships (FROS SPCE RLTN) Numbers are RAW SCORES.	k-2	106	YES	YES	YES	.3
Frostig Developmental Test of Visual Perception: Position in Space (FROS PSTN SPCE) Numbers are RAW SCORES.	k-2	107	YES	YES	YES	.3
Frostig Developmental Test of Visual Perception: Figure-Ground (FROS FGUR GRND) Numbers are RAW SCORES.	k-2	108	YES	YES	YES	.3
Purdue Perceptual Motor Survey: Walking Board Forward (PPMS WALK BD-1) Numbers are RAW SCORES.	1-3	74	NO	YES	YES	.5
Purdue Perceptual Motor Survey: Walking Board Backward (PPMS WALK BD-2) Numbers are RAW SCORES.	1-3	75	NO	YES	YES	.5

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CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE			PRICE/ PERSON
			FILE	SURV	TREAT	
Purdue Perceptual Motor Survey:Walking Board Sidewise (PPMS WALK BD-3) Numbers are RAW SCORES.	1-3	76	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Jumping (PPMS JUMP) Numbers are RAW SCORES.	1-3	77	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Identification of Body Parts (PPMS ID BODY) Numbers are RAW SCORES.	1-3	78	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Imitation of Movement (PPMS APE MVMT) Numbers are RAW SCORES.	1-3	79	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Obstacle Course (PPMS OBST CRS) Numbers are RAW SCORES.	1-3	80	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Both Eyes-Lateral (PPMS OCLR PM-1) Numbers are RAW SCORES.	1-3	81	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Both Eyes-Vertical (PPMS OCLR PM-2) Numbers are RAW SCORES.	1-3	82	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Both Eyes-Diagonal (PPMS OCLR PM-3) Numbers are RAW SCORES.	1-3	83	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Both Eyes-Rotary (PPMS OCLR PM-4) Numbers are RAW SCORES.	1-3	84	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Right Eye-Lateral (PPMS OCLR PM-5) Numbers are RAW SCORES.	1-3	85	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Right Eye-Vertical (PPMS OCLR PM-6) Numbers are RAW SCORES.	1-3	86	NO	YES	YES	.50

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CATALOG OF VARIABLES FOR PROBLEM 1

	GRADES	VARIABLE	AVAILABILITY ON			PRIC
VARIABLE DESCRIPTION	AVAILABLE	INDEX	FILE	SURV	TREAT	PERS
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Right Eye-Diagonal (PPMS OCLR PM-7) Numbers are RAW SCORES.	1-3	87	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Right Eye-Rotary (PPMS OCLR PM-8) Numbers are RAW SCORES.	1-3	88	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Left Eye-Lateral (PPMS OCLR PM-9) Numbers are RAW SCORES.	1-3	89	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Left Eye-Vertical (PPMS OCLR PM10) Numbers are RAW SCORES.	1-3	90	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Left Eye-Diagonal (PPMS OCLR PM11) Numbers are RAW SCORES.	1-3	91	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Occular Pursuit Movements-Left Eye-Rotary (PPMS OCLR PM12) Numbers are RAW SCORES.	1-3	92	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Rhythmic Writing: Rhythm (PPMS RTHM WRI1) Numbers are RAW SCORES.	1-3	93	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Rhythmic Writing: Reproduction (PPMS RTHM WRI2) Numbers are RAW SCORES.	1-3	94	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Rhythmic Writing: Orientation (PPMS RTHM WRI3) Numbers are RAW SCORES.	1-3	95	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Chalkboard: Circle (PPMS CHLK BD-1) Numbers are RAW SCORES.	1-3	96	NO	YES	YES	.50

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CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Purdue Perceptual Motor Survey:Chalkboard: Double Circles (PPMS CHLK BD-2) Numbers are RAW SCORES.	1-3	97	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Chalkboard: Lines, lateral (PPMS CHLK BD-3) Numbers are RAW SCORES.	1-3	98	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Chalkboard: Lines, vertical (PPMS CHLK BD-4) Numbers are RAW SCORES.	1-3	99	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Kraus-Weber (PPMS KRAS WEBR) Numbers are RAW SCORES.	1-3	100	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Angels-In-The -Snow (PPMS ANGL SNOW) Numbers are RAW SCORES.	1-3	101	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Developmental Drawing:Form (PPMS DVLP DRW1) Numbers are RAW SCORES.	1-3	102	NO	YES	YES	.50
Purdue Perceptual Motor Survey:Developmental Drawing:Organization (PPMS DVLP DRW2) Numbers are RAW SCORES.	1-3	103	NO	YES	YES	.50
Wepman Auditory Discrimination Test (WPMN AUD DISC) Numbers are RAW SCORES.	K-3	128	YES	YES	YES	1.00
6. PERSONALITY VARIABLES						
California Test of Personality:Self Reliance (CTP SELF RELY) Numbers are SCALED SCORES.	k-3	150	NO	YES	YES	.05
California Test of Personality:Sense of Personal Worth (CTP SELF WRTH) Numbers are SCALED SCORES.	k-3	151	NO	YES	YES	.05
California Test of Personality:Sense of Personal Freedom (CTP SELF FREE) Numbers are SCALED SCORES.	k-3	152	NO	YES	YES	.05

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VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
California Test of Personality: Feeling of Belonging (CTP FEEL BLNG) Numbers are SCALED SCORES.	k-3	153	NO	YES	YES	.05
California Test of Personality: Freedom From Withdrawing Tendencies (CTP WITH DRAW) Numbers are SCALED SCORES.	k-3	154	NO	YES	YES	.05
California Test of Personality: Freedom From Nervous Symptoms (CTP NRVS SYMP) Numbers are SCALED SCORES.	k-3	155	NO	YES	YES	.05
California Test of Personality: Social Standards (CTP SOCL NORM) Numbers are SCALED SCORES.	k-3	156	NO	YES	YES	.05
California Test of Personality: Social Skills (CTP SOCL SKIL) Numbers are SCALED SCORES.	k-3	157	NO	YES	YES	.05
California Test of Personality: Freedom From Anti-Social Tendencies (CTP ANTI SOCL) Numbers are SCALED SCORES.	k-3	158	NO	YES	YES	.05
California Test of Personality: Family Relations (CTP FMLY RLTN) Numbers are SCALED SCORES.	k-3	159	NO	YES	YES	.05
California Test of Personality: School Relations (CTP SCHL RLTN) Numbers are SCALED SCORES.	k-3	160	NO	YES	YES	.05
California Test of Personality: Community Relations (CTP TOWN RLTN) Numbers are SCALED SCORES.	k-3	161	NO	YES	YES	.05
7. PERSONAL HISTORY VARIABLES						
Age (AGE) - (1=5 yrs., 2=6 yrs., 3=7 yrs., 4=8 yrs., 5=9 yrs.)	k-3	1	YES	YES	YES	.10
Family Marital Situation (FMLY MRTL STTN) - (1=Both Parents Present, 2=Divorced, 3=Mother Deceased, 4=Father Deceased, 5=Step-Parent Present)	k-3	23	NO	YES	YES	.30

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CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRI PER
Father's Education (DADS EDUC)-(1=0-8 yrs., 2=9-11 yrs., 3=12 yrs., 4=13-15 yrs., 5=16+ yrs.)	k-3	17	NO	YES	YES	.3
Father's Occupation (DADS WORK)-(1=Unemployed, 2=Unskilled Labor, 3=Skilled Labor, 4=Managerial, 5=Professional/Technical)	k-3	14	YES	YES	YES	.3
Health (HLTH)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	5	YES	YES	YES	.3
Hearing (HEARING)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	7	YES	YES	YES	.3
Mother's Education (MOMS EDUC)-(1=0-8 yrs., 2=9-11 yrs., 3=12 yrs., 4=13-15 yrs., 5=16+ yrs.)	k-3	16	NO	YES	YES	.3
Mother's Occupation (MOMS WORK)-(1=Unemployed, 2=Employed)	k-3	15	YES	YES	YES	.3
Race (RACE)-(1=White, 2=Non-White)	k-3	2	YES	YES	YES	.1
Sex (SEX)-(1=Female, 2=Male)	k-3	3	YES	YES	YES	.1
Sibling Position (SPOT IN FMLY)-(1=Only Child, 2=Oldest of 2 Children, 3=Youngest of 2 Children, 4=Oldest of 3-5 Children, 5=Middle of 3-5 Children, 6=Youngest of 3-5 Children, 7=Oldest of 6+ Children, 8=Middle of 6+ Children, 9=Youngest of 6+ Children)	k-3	4	NO	YES	YES	.2
Socio-Economic Status (SES):Deutsch Index-(1=Very Low, 2=Low, 3=Middle, 4=Upper-Middle, 5=Upper)	k-3	22	NO	YES	YES	.4
Vision (VI- SION)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	6	YES	YES	YES	.3

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Perseveration (PERSEVRATION) (1=very high, 2=high, 3=moderate, 4=low, 5=very low)	K-3	13	NO	YES	YES	.30

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 1

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE PERSO
8. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS						
Father's Attitude Toward Program (DAD FEEL PRGM) -(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	20	NO	YES	YES	.35
Father's Attitude Toward School (DAD FEEL SCHL)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	18	NO	YES	YES	.35
Mother's Attitude Toward Program (MOM FEEL PRGM)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	21	NO	YES	YES	.35
Mother's Attitude Toward School (MOM FEEL SCHL)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	19	NO	YES	YES	.35
9. TEACHER EVALUATION OF STUDENTS						
Attendance (ATTN DNCE). Average per cent of time present: (1=<85, 2=85-89, 3=90-94, 4=95-99, 5=>99)	k-3	24	NO	YES	YES	.1
Average Report Grade (AVER GRDE) (1=unsatisfactory, 2=needs improvement, 3=satisfactory, 4=good, 5=excellent)	k-3	25	YES	YES	YES	.1
Class Participation (INVL IN CLAS)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	10	NO	YES	YES	.3
Classroom Behavior (CON DUCT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	11	NO	YES	YES	.3
Distractability (DIST RACT BLTY) (1=very high, 2=high, 3=moderate, 4=low, 5=very low)	k-3	8	NO	YES	YES	.3
Hyperactivity (HYPR ACTV ITY) (1=very hyperactive, 2=hyperactive, 3=active, 4=somewhat active, 5=placid)	k-3	12	NO	YES	YES	.3
Peer Interaction (PEER INTR ACT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-3	9	NO	YES	YES	.3

APPENDIX V

FAIR CITY SCHOOL DISTRICT

REPORT OF THE AD HOC COMMITTEE ON PERCEPTUALLY HANDICAPPED CHILDREN

In response to the concern shown by teachers and parents regarding the perceptual problem of a substantial number of students in the school district, a committee of teachers was formed under the chairmanship of Mr. Fillform, the director of pupil personnel. The members of the committee were appointed by the superintendent and the other principals according to interest and expertise in the problem area. The purpose of the committee was to define the problem and to investigate the possible solutions feasible in our school district. The report below represents the consensus view of the committee.

Definition

The term "perceptual handicap" has often been used to define a myriad of syndromes (McDonald, 1968). Thus, it is important to define the use of the term as clearly as possible. The California Association for the Neurologically Handicapped Children defines a perceptual handicap as "an impairment in the normal processes of perception; that is, in the basic ability of all human beings to cope with ahd to make sense out of the environment in which they live." Researchers have excluded from the category of perceptually handicapped all children with severe emotional problems. The impairment hinders such abilities as hand-eye coordination and perceptual discrimination tasks. The intelligence of such children is normal on nonperceptual material but their ability to read and perform other school tasks requiring perceptual acuity is often severely retarded.

Identification of the Problem

Since this problem has come to our attention, all the children who are enrolled in kindergarten, first, second, or third grade at Jackandjill Elementary School have been given a battery of tests to determine their perceptual maturity. However, because not all of the tests in the battery were appropriate for all four grades, some tests could not be administered to certain grade levels. The battery of tests consisted of the following:

- The Wepman Auditory Discrimination Test: a standardized test which identifies children who have auditory discrimination difficulties.
- The Film Test of Visual Perception: devised by our school system to determine not only visual acuity but also hand-eye coordination.
- The Frostig Developmental Test of Visual Perception: given to determine the general perceptual age of the children as well as to indicate perceptual difficulties.
- The Raven Progressive Matrices Test: a nonverbal test of intelligence.

APPENDIX V

All the test norms and the individual scores obtained by children are on file at the Jackandjill Elementary School.

From the battery of tests, we discovered that many children in Jackandjill scored poorly on the tests of perceptual ability. Since none of the children have I.Q. scores below 75, it seems imperative to everyone that something be done to help these children achieve their academic potential. All of the children have been encountering difficulties with their academic work. In past years the only help we have given these children is alerting their teachers to the difficulty. Since the regular teacher does not have much free time to help individual children, these children have received virtually no help.

Previous Research Findings

While considering the problems of perceptually handicapped children in the Fair City Schools, the ad hoc committee investigated projects currently in progress which deal with this problem. These were examined for the variables they utilized in identifying children as perceptually handicapped and for the programs they employed to remediate their difficulties. The most pertinent findings follow:

The Lakeview Public Schools (St. Clair Shores, Michigan) in their Project Genesis evaluated 556 children in the primary grades for learning problems in terms of auditory perception, visual-motor integration, I.Q. and reading readiness. They reported success with individualized programs of remediation.

The Lamphere Public Schools (Madison Heights, Michigan) conducted a Differential Education Project with primary grade children which was similar to Project Genesis in terms of the variables considered and treatments effected.

The State of Rhode Island instituted a pilot project in which 4000 children in the primary grades were evaluated for visual-perceptual-motor difficulties. They found that ten to eleven percent of the male population and six to seven percent of the female population evidenced such problems. At older ages, the female means became higher than the male means. There was a relationship between academic achievement and visual-perceptual-motor skills, but there was clear evidence that interventive treatment effects were not a function of intelligence alone. The group concluded that learning disabilities characterized by specific dysfunctions in the visual-perceptual-motor area can be remediated within public education.

Recommendations

It was decided that the school in which the preliminary research should be conducted is Jackandjill Elementary. This decision was made because of the large number of perceptually handicapped children in the school. Two possible programs were explored as feasible in our system with the limits of space and money. A research team should be hired to conduct this project. The team may also have further proposals, but as it stands now, the following two programs are recommended for investigation.

APPENDIX V

Plan A:

This program is called the Visual Perceptual Motor program (VPM). It hypothesizes that these children are suffering from a neurological disorganization and, thus, this program is geared to alleviate this disorganization. The purpose of the VPM is to facilitate and coordinate the development of visual, motor and perceptual skills through a reorganization of the neurological connections in the brain.

The materials used in this program are coordinated with the Frostig Test of Visual Perception. Thus, the program is based on Frostig's conception of the treatment of learning disturbances as a concentration on four major areas: (1) amelioration of specific developmental lags, primarily through programs focusing on these areas; (2) amelioration of global and pervasive disturbances, such as impulsivity and distractibility, principally through techniques of classroom management; (3) teaching of subject matter and skills; and (4) aiding the child's social adjustment and emotional development (see Frostig, 1963).

This program can treat all the children in this school who are perceptually handicapped and is especially geared to servicing the general perceptual difficulties which we have found in these children. The children will be contained in a special classroom for the entire school day. In this way a concentrated effort can be employed to help the children return to their regular classrooms as soon as possible.

Program B:

The other program is called the Specific Learning Disabilities Program (SLD). It was developed by the teachers in a neighboring school district and they have met with some success in its use. The program concentrates on improving skills in four specific areas of perceptual motor performance:

- Visual memory and comprehension
- Spatial orientation
- Visual motor coordination
- Auditory memory and comprehension skills

This kind of program can accommodate a large number of children with perceptual motor difficulties, whether slight or severe, because the children are taken out of their classroom only 4 times a week for 30 minutes at a time to work intensively in the four above areas. The groups in which the children will be working range from 5 to 10 children so that even a child with severe difficulties can get individual attention. It is hoped that this program will help more children and in a way which does not disrupt their classroom activities.

FEHR - PRACTICUM

Request For Proposals

For

REMEDIAL ARITHMETIC (REMAR)

RFP002

©

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PROJECT NO. 0-9047
CONTRACT NO'S. OEC-0-70-4773(520)
OEG-0-72-0529

LEVERNE S. COLLET
4215A School of EDUCATION BUILDING
UNIVERSITY OF MICHIGAN

FEHR-PRACTICUM REQUEST FOR PROPOSALS (RFP)
RFP002:REMAR (Remedial Arithmetic)

The Fair City Board of Education is soliciting proposals for the field evaluation of the three remedial arithmetic programs designed to help grade seven students master the basic computational skills. Specific details of the programs to be evaluated are given in the accompanying description and its various appendices.

In general, projects will be funded in two separate phases. In phase I, a team is awarded a planning grant which will enable them to explore the extent and severity of the problem and to develop a proposal for an experimental study of the effects of the two available remedial programs as compared to present classroom practice. When an adequate proposal has been developed, the team will then be funded for phase II, in which they actually carry out the proposed research. A detailed description of the specific form and contents of the request for a planning grant and the research proposal are given in the Players' INstructions. In either case, the level of funding is subject to negotiation with the game manager.

A detailed description of the tasks involved in each phase of the project is provided in the INSTRUCTIONS section of the FEHR-PRACTICUM Players' Handbook. However, the time available and the needs of the players involved in a particular game vary from location to location. For that reason, the projects which may be funded under this RFP will vary widely in their scope, complexity, and degree of sophistication. The level of complexity expected from your team for this particular problem is specified in the itemized list of the work to be accomplished which appears later in this document.

The remainder of this RFP document is organized into three sections. The first section, entitled Problem Description, provides an overview of the problem, and describes the particular treatments (programs), research subjects, and variables which may be used in your study. In addition, it provides specific references to various sources of additional information. The second section provides a detailed list of the tasks to be performed by your team. The third section is a set of appendices providing detailed data on the various components described in section I. A table of contents appears at the beginning of this section.

PROBLEM DESCRIPTION

The Problem: The Fair City mathematics teachers have complained that a large number of seventh-grade students are unable to add, subtract, multiply, and divide well enough to succeed in the regular curriculum. Since the teachers believed that mastery of simple computational skills is prerequisite to success in all walks of life, a committee was formed to investigate various means of alleviating the problem. In a comprehensive report submitted to the School Board last May, the committee described three alternatives to the present program and recommended that a field evaluation of the three programs be conducted during the next (this) school year. A summary of the report appears in Appendix V.

The Research Population: All of the grade seven students in the Fair City School system are available in this problem. A list of the members of each class in all seven junior high schools is given in Appendix II.

Available Variables: In addition to the usual background variables (e.g., sex, age, socio-economic status, race, etc.) and several standard achievement tests, this problem features criterion-referenced or mastery tests of computational skill constructed by the committee. There is a separate test for each skill area (addition, subtraction, multiplication, and division). Each test was designed so that a student with "adequate" proficiency in the skill area could obtain a perfect score (10 points). See the Committee Report for a more detailed discussion of the mastery tests. A complete listing of all the variables available in this problem, and their respective costs appears in Appendix IV.

Available Treatments: Four treatments are available in this problem: (1) the present practice, (2) the AUTOMATH program, (3) the remedial teaching program, and (4) the IRA program. A summary of each program and their attached costs appears in Appendix III. Narrative descriptions of the four programs appear in the Committee Report.

Previous Research: Reports of previous research concerning the proposed program are available in the Information Bank. See Appendix I for a list of titles.

CHECKLIST OF TASKS TO BE PERFORMED

Since the work to be accomplished under this RFP varies from location to location, your Game Manager has placed a ( ) before the particular items for which your team is responsible in the PRACTICUM. (If no items are checked, see your Game Manager before proceeding.) A detailed explanation of how to accomplish each task appears in the Instructions section on the page indicated at right. Tasks marked with an asterisk (*) are mandatory in every PRACTICUM. Before beginning, each player should study, interrelate, and synthesize the information contained in the RFP, its various appendices, and the relevant parts of the Fair City Booklet.

Assigned Tasks		Description of Task	Instructions Page
__*__	(1)	Each player should submit an Orientation Questionnaire to the Game Manager. The specific question to be answered are in the INSTRUCTIONS.	1
__*__	(2)	Form teams as directed by the Game Manager. The following assignments and requirements apply throughout this PRACTICUM: Team salary: $_____ per day. Costs are to be paid as indicated below: ___(a) ignore all costs ___(b) pay costs by check ___(c) pay costs with computer receipts Requests for file searches, survey and treatments should be: ___(a) entered by the team via PROMPTS ___(b) entered by the team via punch cards ___(c) written on the appropriate form and submitted to the Game Manager A Log of research activities: ___(a) to be kept by each player ___(b) to be kept by each team ___(c) no long necessary	1
__*__	(3)	Operationalize the problem observing the following restrictions: Literature: ___no review necessary ___Information Bank only ___Information Bank and regular library Definition: ___Problem definition provided by Game Manager ___complete problem definition form	3-5

Assigned Tasks	Description of Task	Instructions Page
_____ (4)	Determining Extent and Severity of the Problem ___4.1 Submit a Request for a Planning Grant on the form provided Due Date:______________________ Maximum Grant $________________ ___4.2 Run File Search and/or Survey Maximum sample size:___________ Maximum number of variables____ (___independent; ___dependent) ___4.3 Analyze the data from 4.2 using appropriate statistical procedures ___4.4 Formal Problem Description (first draft). To be presented for critiquing by the other teams on (date)__________________________	5-7
_____ (5)	Funds are available for identifying a Pool of Research Subjects for Treatments ___Yes; ___No	7
_____ (6)	Empirical Evaluation of the Education Treatments ___6.1 Submit a Research Proposal to the Game Manager. The proposal must meet these restrictions and requirements: Maximum number of variables per observation: Dependent_____; Independent_____; Total_____ Maximum number of observation times_____ Maximum number of research subjects _____ Date proposal must be submitted_____ The maximum project budget is: $_____ The proposal should contain each item checked below: ___(a) abstract of the proposal ___(b) introduction and overview of problem	7-9

Assigned Tasks	Description of Task	Instructions Page

___(c) a review of the related literature from:
  ___the Information Bank only
  ___both the Information Bank and library
___(d) a formal statement of the problem
___(e) a description of the procedures to be used
___(f) a schedule of activities
___(g) an itemized budget

The writing style for the proposal is checked below:

___(a) brief outline
___(b) detailed outline
___(c) formal narrative

___6.2 Using an appropriate method, divide your sample into treatment groups, observing the restrictions given in Task 3. Run the experiment on the FEHR Data Generator. Data will be output on:

___(a) printed copy only
___(b) printed copy and punch cards
___(c) printed copy and the team's computer file

___6.3 Analyze and interpret the data from Step 6.2 using appropriate statistical procedures. Record restrictions (to be announced by the Game Manager) below:

____

____

___6.4 Submit a final report to the Game Manager. The report should contain the proposal items checked in 6.1 plus the items checked below:

___(h) the results of the field test
___(i) a summary of the statistical findings
___(j) a discussion of results culminating in an educational decision
___(k) a discussion of the limitations of the project

Assigned Tasks	Description of Task	Instructions Page
	___(l) recommendations for future research ___(m) an appendix containing the log(s) of activities The writing style of the final report should be: ___(a) brief outline ___(b) detailed outline ___(c) formal narrative Final report due date:____________	
_____ (7)	Attend a Consolidation Session (at a time to be announced by the Game Manager) to discuss the strengths and weaknesses of the strategies employed by your team, and any other teams which are attacking the same problem	9

APPENDICES
TABLE OF CONTENTS

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APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 2
REMEDIAL ARITHMETIC

1. References Directly Related To This Problem.

Atkinson, R.C. "Beverly: The Computer is a Tutor." *Readings in Psychology Today*. Del Mar, California: CRM Books, 1969, 61-67.

Austin, M. "Computers in Mathematics Education." *Audio-Visual Instructor*, 1969, 14(5), 44-45.

Buchman, A.L. "The Use of Calculators and Computers in Mathematics Instruction in New York State High Schools." *School Science and Mathematics*, 1969, 64(5), 385-392.

Crawford, A.N. "A Pilot Study of Computer-Assisted Drill and Practice in Seventh Grade Remedial Mathematics." *California Journal of Educational Research*, 1970, 21(4), 170-181.

Forsythe, A. "Mathematics and Computing in High School: A Betrothal." *Mathematics Teacher*, 1964, (January, 1964), 2-7.

Gipson, Joella. *Use of Computer-Assisted Instruction in Mathematics for Disadvantaged Seventh Grade Youth*, 1971. (ERIC)

Goodland, J., O'Toole, J. And Tyler, L. *Computers and Information Systems in Education*. New York, Harcourt, Brace and World, 1966.

Harvey, R.B. "Grade Seven and a Computer." *School Science and Mathematics*, LXVII (February, 1968), 91-94.

High School Time-Shared System." *Datamation* (January, 1969), 148-149.

Kelsey, K.W. "Exercises in Computer-Assisted Physics and Mathematics," *School Science and Mathematics*, LXVII (February, 1967), 119-123.

Kerr, E.B. And Rahmlow, H.F. "Computer-Assisted Mathematics Instruction in Small Schools," *AV Instruction*, XIV (February, 1969), 24-26.

LaFrenz, D. And Kieran, T. "Computers for All Students--A New Philosophy of Computer Use." *School Science and Mathematics*, 1969, 69(1), 39-41.

Lopez, G. "Algebra and Physics Taught by Teletype," *CTA Journal*, LXIV (March, 1968), 10-12.

Martin, D.L. "Elective in Mathematics," *Mathematics Teacher LX* (December 1967), 866-869.

McGrath, K. "Computer-Oriented Mathematics," *Texas Outlook*, L (January, 1966), 34-35.

Preliminary Report and other unpublished material from CAI Laboratory in Mathematics and Science, 7618 Wyandotte Street,

APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 2
REMEDIAL ARITHMETIC

Room 214, Kansas City, Missouri 64114.

"Project LOCAL Finds Computer-Assisted Instruction Effective," *Data Processing for Education* (February, 1969).

Rounds, S. "Fifth and Sixth Graders Program A Computer," *Instructor*, LXVIII (April, 1968), 53.

Schilhab, E. "Digital Computing Drops Into the Curriculum Pond." *Texas Outlook*, 1967, 51(5), 27.

Zoet, C.J. "Computers in Mathematics Education," *Arithmetic Teacher*, 1969, 62(11), 563-567.

2. Auxiliary References.

Junior High School Information (Fair City).

Kagan, Jerome and Moss, H.A. "Parental Correlates of Child's I.Q. And Height: A Cross-Validation of the Berkeley Growth Study Results." *Child Development*, 1959, 30, 325-332.

Laurent, James A. Do Pupil Race and/or School Racial Balance Affect Academic Performance? Bulletin; December, 1970. (ERIC)

St. John, Nancy. "Thirty-Six Teachers: Their Characteristics and Outcomes for Black and White Pupils." *American Educational Research Journal*, 1971, 8(4), 635-648.

3. Descriptive and Normative Information About Variables (Tests).

California Test of Mental Maturity (Short Form).

Criterion-Referenced Tests of Computational Competency.

Deutsch Socio-Economic Status Index

Gates Reading Tests.

Iowa Test of Basic Skills.

Leiter International Performance Scale.

Lorge-Thorndike Intelligence Scale.

Nelson Silent Reading Test.

Otis-Lennon Mental Ability Test.

Otis Quick-Scoring Mental Ability Test.

Peabody Picture Vocabulary Test.

Stanford Achievement Tests.

APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 2
REMEDIAL ARITHMETIC

Stanford-Binet Intelligence Scale.

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4. Test Critiques, Validation Studies, etc.

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Brim, O.B. "American Attitudes Toward Intelligence Tests." *American Psychologist*, 1965, 20, 125-130.

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Deloria, D. "The Stanford-Binet in the Ypsilanti Curriculum. Why?" High Scope Educational Research Foundation.

Eagle, N. And Harris, A.S. "Interaction of Race and Test on Reading Performance Scores." *Journal of Educational Measurement*, 1966, 6(3), 131-135.

Feldman, S. And Weiner, M. "The Use of a Standardized Reading Achievement Test with Two Levels of Socio-Economic Status Pupils." *The Journal of Experimental Education*, 1964, 32(3), 269-274.

Fortenburry, W.D. And Broome, B.J. "Comparison of the Gates Reading Survey and the Reading Section of the Wide-Range Achievement Test." *Journal of Developmental Reading*, 1963, 7(3), 66-68.

Gage, G.E. And Naumann, T.F. "Correlation of the Peabody Picture Vocabulary Test and the Wechsler Intelligence Scale for Children." *The Journal of Educational Research*, 1965, 58(10), 466-468.

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APPENDIX I
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Knief, L.M. And Stroud, I.B. "Intercorrelations Among Various Intelligence, Achievement, and Social Class Scores." Journal of Educational Psychology, 1959, 50(3), 117-120.

Lefever, D.W., "Critique of Otis Quick-Scoring Mental Ability Test." In O.K. Buros (Ed.) The Sixth Mental Measurement Yearbook, Highland Park, New Jersey, The Gryphon Press, 1965, 362.

Pool, D.A. And Brown, R. "The Peabody Picture Vocabulary Test as a Measure of General Adult Intelligence." Journal of Consulting and Clinical Psychology, 1970, 34(1), 8-11.

Rainey, R.G. "A Study of Four School-Ability Tests." The Journal of Experimental Education, 1965, 33(4), 305-319.

Smith, A.E. "Otis-Lennon Mental Ability Test." Journal of Counseling Psychology, 1970, 17(1), 91-92.

Yates, A. "Critique of Otis Quick-Scoring Mental Ability Tests," In O.K. Buros, (Ed.) The Sixth Mental Measurement Yearbook, Highland Park, New Jersey, The Gryphon Press, 1965, 362.

RESEARCH POPULATION: APPENDIX II

The research population for the Remedial Arithmetic program consists of all the students enrolled in grade seven in the junior high schools of Fair City. Each of these students has an I.D. consisting of three sections. The first two digits from the left determine the school, the next two digits determine the class and the last three digits determine the individual child. For example, 07-06-013 identifies the seventh school (John Watts), the sixth class (they are all seventh grades), and the 13th student. The hyphens are used only for clarity. When entering this student's I.D. in the computer, one would type 0706013. If you want to measure all the students in a class, all you have to do is enter zeroes in the spot for the individual student digits. For example, 0202000 would provide the variable score for all students in the second class in Hiram Gordon school. This is entered into the computer as one I.D. When you enter this I.D. in the computer it only represents one of the I.D.'s allotted to a line but you receive the results for that whole class. There are 1906 separate student I.D.'s in the research population for this problem, as illustrated in the table below.

NAME OF SCHOOL	SCHOOL OR UNIT INDEX	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
Margery Daw	01	01	28	01-01-001 to 01-01-028
		02	26	01-02-001 to 01-02-026
		03	27	01-03-001 to 01-03-027
		04	29	01-04-001 to 01-04-029
		05	28	01-05-001 to 01-05-028
		06	29	01-06-001 to 01-06-029
		07	29	01-07-001 to 01-07-029
		08	28	01-08-001 to 01-08-028
		09	28	01-09-001 to 01-09-028
		10	29	01-10-001 to 01-10-029
		11	28	01-11-001 to 01-11-028
Hiram Gordon	02	01	30	02-01-001 to 02-01-030
		02	28	02-02-001 to 02-02-028
		03	28	02-03-001 to 02-03-028
		04	27	02-04-001 to 02-04-027
		05	29	02-05-001 to 02-05-029
		06	34	02-06-001 to 02-06-034
		07	31	02-07-001 to 02-07-031
Elsie Marley	03	01	27	03-01-001 to 03-01-027
		02	26	03-02-001 to 03-02-026
		03	25	03-03-001 to 03-03-025
		04	27	03-04-001 to 03-04-027
		05	26	03-05-001 to 03-05-026
		06	27	03-06-001 to 03-06-027
		07	27	03-07-001 to 03-07-027
		08	28	03-08-001 to 03-08-028
		09	27	03-09-001 to 03-09-027
		10	26	03-10-001 to 03-10-026
		11	26	03-11-001 to 03-11-026
		12	27	03-12-001 to 03-12-027
		13	26	03-13-001 to 03-13-026

(cont.)

NAME OF SCHOOL	SCHOOL OR UNIT INDEX	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
Polly Flinders	04	01	26	04-01-001 to 04-01-026
		02	25	04-02-001 to 04-02-025
		03	27	04-03-001 to 04-03-027
		04	24	04-04-001 to 04-04-024
		05	27	04-05-001 to 04-05-027
		06	26	04-06-001 to 04-06-026
		07	25	04-07-001 to 04-07-025
		08	27	04-08-001 to 04-08-027
		09	27	04-09-001 to 04-09-027
		10	26	04-10-001 to 04-10-026
		11	25	04-11-001 to 04-11-025
		12	26	04-12-001 to 04-12-026
William McTrimbletoe	05	01	26	05-01-001 to 05-01-026
		02	27	05-02-001 to 05-02-027
		03	28	05-03-001 to 05-03-028
		04	25	05-04-001 to 05-04-025
		05	27	05-05-001 to 05-05-027
		06	27	05-06-001 to 05-06-027
		07	26	05-07-001 to 05-07-026
		08	28	05-08-001 to 05-08-028
		09	27	05-09-001 to 05-09-027
Robert Barnes	06	01	28	06-01-001 to 06-01-028
		02	28	06-02-001 to 06-02-028
		03	29	06-03-001 to 06-03-029
		04	28	06-04-001 to 06-04-028
		05	29	06-05-001 to 06-05-029
		06	28	06-06-001 to 06-06-028
		07	30	06-07-001 to 06-07-030
		08	29	06-08-001 to 06-08-029
John Watts	07	01	29	07-01-001 to 07-01-029
		02	29	07-02-001 to 07-02-029
		03	29	07-03-001 to 07-03-029
		04	30	07-04-001 to 07-04-030
		05	31	07-05-001 to 07-05-031
		06	29	07-06-001 to 07-06-029
		07	30	07-07-001 to 07-07-030
		08	28	07-08-001 to 07-08-028
		09	29	07-09-001 to 07-09-029

CATALOG OF TREATMENTS: APPENDIX III

TREATMENT INDEX	NAME OF TREATMENT	TREATMENT DESCRIPTION
01	Present Practice	Students remain in their regular classes.
02	AUTOMATH	This treatment takes students out of their regular mathematics classes for four one-half hour sessions per week to work with a computer program which automatically administers a series of drill and practice exercises in the basic computational skills.
03	Remedial Mathematics	This treatment takes students out of their regular mathematics classes for four one-half hour sessions per week to work with a special remedial mathematics teacher.
04	IRA	This treatment takes students out of their regular mathematics classes for four one-half hour sessions per week to work with a programmed text that administers a series of drill and practice exercises in the basic computational skills.

SUMMARY OF TREATMENT COSTS

TREATMENT INDEX	PER PUPIL SET-UP COST	PER PUPIL MAINTENANCE COST
01	$0	$0
02	$0	$20/Week
03	$15	$15/Week
04	$20	$10/Week

Treatment Times. The time units in this problem are weeks. Time 00 represents the first day of class, time 01 the end of the first week of class, and so on. Treatments may be administered for any week from 00 to 15 inclusive, although tests cannot be administered more than 9 times during a treatment.

Observation Time or Testing Time. This refers to the time at which a particular set of variables are observed or measured during a treatment. The observation times available in this problem are: 00, 01, 02 ..., 15.

Note: The costs listed above do not include per/person test costs, although those costs will be included in the assessed charge when tests are given during treatments. (See Catalog of Variables for these costs.) There are no other overhead costs for administering tests during treatments.

CATALOG OF VARIABLES: APPENDIX IV

TABLE OF CONTENTS

TYPE		Page
I.	ABILITY AND INTELLIGENCE VARIABLES	16
II.	ACHIEVEMENT VARIABLES	16
III.	READING ACHIEVEMENT AND READINESS VARIABLES	18
IV.	PERSONAL HISTORY VARIABLES	19
V.	QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS	20
VI.	TEACHING EVALUATION OF STUDENT	21

Note 1: The category, GRADE AVAILABLE indicates at which grade level the test can be administered.

Note 2: The category, AVAILABLE ON: FILE SURV TREAT identifies the process by which individual variables can be retrieved. That is, if there is a "YES" under FILE, the variable can be retrieved via a File Search. If there is a "YES" under SURV, the variable can be measured via a Survey. If there is a "YES" under TREAT, the variable can be measured during a Treatment.

Note 3: The category, PRICE/PERSON indicates costs of variable scores measured via survey and during treatment ONLY. If the variable is retrieved via File Search, the cost/variable/person is ALWAYS 5¢.

Note 4: Unless otherwise stated, assume that all scores in the files were obtained from "tests" administered during registration at the beginning of the grade seven year.

Note 5: Assume that all survey data is collected at time 0, which is the first day of classes. Likewise, all data collected at time 0 during a treatment is the first day of classes.

Note 6: Assume that teacher evaluations of the student are made by the teacher with whom the student is spending the majority of the school day at any given testing time.

COSTS THAT MAY BE INCURRED DURING REMAR

File Search

1.	Fixed overhead charge for initiating a search	$10.00
2.	Overhead costs of entering units	$20.00/unit
3.	Overhead costs of entering sub-unit files	$ 0.00/sub-unit
4.	Cost of variable scores	$ 0.05/variable/ person in all cases

Survey

1.	Fixed overhead charge for initiating a survey	$20.00
2.	Overhead costs of entering units	$20.00/unit
3.	Overhead costs of administering tests to sub-units	$ 0.00/sub-unit
4.	Cost of variable scores	See Catalog of Variables

Secretary

1.	Fixed overhead costs for initiating use of secretary	$25.00
2.	Cost of secretary per student	$ 0.10

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 2

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
1. ABILITY AND INTELLIGENCE VARIABLES					
California Test of Mental Maturity:Verbal I.Q. (CTMM VRBL IQ) Numbers are SCALED SCORES.	34	NO	YES	YES	.20
California Test of Mental Maturity:Non-Verbal I.Q. (CTMM NON- VRBL) Numbers are SCALED SCORES.	35	NO	YES	YES	.20
California Test of Mental Maturity:Total I.Q. (CTMM TOTL IQ) Numbers are SCALED SCORES.	36	NO	YES	YES	.40
Leiter International Performance Scale (LIPS) Numbers are SCALED SCORES.	37	NO	YES	YES	7.75
Lorge-Thorndike IQ Test:Verbal (LORG VRBL) Numbers are RAW SCORES.	54	NO	YES	YES	.20
Lorge-Thorndike IQ Test:Non-Verbal (LORG NON- VRBL) Numbers are RAW SCORES.	55	NO	YES	YES	.20
Otis Lennon Mental Ability Test (OTIS LNON IQ) Numbers are SCALED SCORES.	47	YES	YES	YES	.30
Otis Quick Scoring Ability Test (OTIS IQ) Numbers are SCALED SCORES.	66	NO	YES	YES	.25
Peabody Picture Vocabulary Test (PPVT) Numbers are SCALED SCORES.	38	NO	YES	YES	2.25
Stanford-Binet (S-B) Numbers are SCALED SCORES.	33	NO	YES	YES	12.65
2. ACHIEVEMENT VARIABLES					
Criterion Referenced Mastery Tests:Addition (CRT ADD) Numbers are RAW SCORES.	75	NO	YES	YES	.05
Criterion Referenced Mastery Tests:Division (CRT DIV) Numbers are RAW SCORES.	78	NO	YES	YES	.05

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 2

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Criterion Referenced Mastery Tests:Multiplication (CRT MULT) Numbers are RAW SCORES.	77	NO	YES	YES	.05
Criterion Referenced Mastery Tests:Subtraction (CRT SUB) Numbers are RAW SCORES.	76	NO	YES	YES	.05
Iowa Test of Basic Skills:Vocabulary (ITBS VCAB) Numbers are RAW SCORES.	50	NO	YES	YES	.20
Iowa Test of Basic Skills:Reading Comprehension (ITBS READ COMP) Numbers are RAW SCORES.	51	NO	YES	YES	.20
Iowa Test of Basic Skills:Spelling (ITBS SPEL) Numbers are RAW SCORES.	52	NO	YES	YES	.20
Iowa Test of Basic Skills:Capitalization (ITBS CAPS) Numbers are RAW SCORES.	53	NO	YES	YES	.20
Iowa Test of Basic Skills:Punctuation (ITBS PUNC) Numbers are RAW SCORES.	54	NO	YES	YES	.20
Iowa Test of Basic Skills:Language Uses (ITBS LANG USE) Numbers are RAW SCORES.	55	NO	YES	YES	.20
Iowa Test of Basic Skills:Map Reading (ITBS MAP READ) Numbers are RAW SCORES.	56	NO	YES	YES	.20
Iowa Test of Basic Skills:Graphs and Tables (ITBS GRPH &TBL) Numbers are RAW SCORES.	57	NO	YES	YES	.20
Iowa Test of Basic Skills:References (ITBS REFS) Numbers are RAW SCORES.	58	NO	YES	YES	.20
Iowa Test of Basic Skills:Math Concepts (ITBS MATH CONC) Numbers are RAW SCORES.	59	NO	YES	YES	.20
Iowa Test of Basic Skills:Math Problem Solving (ITBS MATH PROB) Numbers are RAW SCORES.	60	NO	YES	YES	.20

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 2

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE			PRICE/ PERSON
		FILE	SURV	TREAT	
Stanford Achievement Test:Paragraph Meaning (SAT PARA MEAN) Numbers are RAW SCORES.	39	YES	YES	YES	.30
Stanford Achievement Test:Spelling (SAT SPEL) Numbers are RAW SCORES.	40	YES	YES	YES	.30
Stanford Achievement Test:Language (SAT LANG) Numbers are RAW SCORES.	41	YES	YES	YES	.30
Stanford Achievement Test:Arithmetic Computation (SAT MATH COMP) Numbers are RAW SCORES.	42	YES	YES	YES	.30
Stanford Achievement Test:Arithmetic Concepts (SAT MATH CONC) Numbers are RAW SCORES.	43	YES	YES	YES	.30
Stanford Achievement Test:Math Application (SAT MATH APPL) Numbers are RAW SCORES.	44	YES	YES	YES	.30
Stanford Achievement Test:Social Studies (SAT SOCL STUD) Numbers are RAW SCORES.	45	YES	YES	YES	.30
Stanford Achievement Test:Science (SAT SCI) NUMBERS ARE RAW SCORES.	46	YES	YES	YES	.30
Wide Range Achievement Test:Reading (WRAT READ) Numbers are RAW SCORES.	61	NO	YES	YES	1.75
Wide Range Achievement Test:Spelling (WRAT SPEL) Numbers are RAW SCORES.	62	NO	YES	YES	1.75
Wide Range Achievement Test:Math (WRAT MATH) Numbers are RAW SCORES.	63	NO	YES	YES	1.75

3. READING ACHIEVEMENT AND READINESS VARIABLES

Gates Basic Reading Test:Reading to Appreciate General Significance (GATE READ AGS) Numbers are RAW SCORES.	67	NO	YES	YES	.15

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 2

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE. PERSO
Gates Basic Reading Test:Reading to Understand Precise Direction (GATE READ UPD) Numbers are RAW SCORES.	68	NO	YES	YES	.15
Gates Basic Reading Test:Reading to Note Details (GATE READ ND) Numbers are RAW SCORES.	69	NO	YES	YES	.15
Gates Basic Reading Test:Reading Vocabulary (GATE READ VCAB) Numbers are RAW SCORES.	70	NO	YES	YES	.15
Gates Basic Reading Test:Reading Level of Comprehension (GATE READ COMP) Numbers are RAW SCORES.	71	NO	YES	YES	.15
Gates Reading Survey:Speed and Accuracy (GRS FAST &PT) Numbers are RAW SCORES.	72	NO	YES	YES	.15
Gates Reading Survey:Comprehension (GRS COMP) Numbers are RAW SCORES.	73	NO	YES	YES	.15
Gates Reading Survey:Vocabulary (GRS VCAB) Numbers are RAW SCORES.	74	NO	YES	YES	.15
Nelson Silent Reading Test-Sixth Grade Score (NELS READ SIX) Numbers are RAW SCORES.	48	YES	NO	NO	.25
Nelson Silent Reading Test-Seventh Grade Score (NELS READ SEVN) Numbers are RAW SCORES.	49	NO	YES	YES	.25
4. PERSONAL HISTORY VARIABLES					
Age (AGE)-(1=11 yrs., 2=12 yrs., 3=13 yrs., 4=14 yrs.)	1	YES	YES	YES	.10
Family Marital Situation (FMLY MRTL SITN)-(1=Both Parents Present, 2=Divorced, 3=Mother Deceased, 4=Father Deceased, 5=Step-Parent Present)	32	NO	YES	YES	.30
Father's Education (DADS EDUC)-(1=0-8 yrs., 2=9-11 yrs., 3=12 yrs., 4=13-15 yrs., 5=16+ yrs.)	16	NO	YES	YES	.35

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 2

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE			PRICE/ PERSON
		FILE	SURV	TREAT	
Father's Occupation (DADS WORK)-(1=Unemployed, 2=Unskilled Labor, 3=Skilled Labor, 4=Managerial, 5=Professional/Technical)	14	YES	YES	YES	.35
Health (HLTH)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	5	YES	YES	YES	.30
Hearing (HEARING)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	7	YES	YES	YES	.35
Mother's Education (MOMS EDUC)-(1=0-8 yrs., 2=9-11 yrs., 3=12 yrs., 4=13-15 yrs., 5=16+ yrs.)	17	NO	YES	YES	.35
Mother's Occupation (MOMS WORK)-(1=Unemployed, 2=Employed)	15	YES	YES	YES	.35
Race (RACE)-(1= White, 2= Non-White)	2	YES	YES	YES	.10
Sex (SEX)-(1=Female, 2=Male)	3	YES	YES	YES	.10
Sibling Position (SPOT IN FMLY)-(1=Only Child, 2=Oldest of 2 Children, 3=Youngest of 2 Children, 4=Oldest of 3-5 Children, 5=Middle of 3-5 Children, 6=Youngest of 3-5 Children, 7=Oldest of 6+ Children, 8=Middle of 6+ Children, 9=Youngest of 6+ Children)	4	NO	YES	YES	.20
Socio-Economic Status (SES):Deutsch Index-(1=Very Low, 2=Low, 3=Middle, 4=Upper-Middle, 5=Upper)	30	YES	NO	NO	.40
Vision (VI- SION)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	6	YES	YES	YES	.35
5. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS					
Father's Attitude Toward Program (DAD FEEL PRGM) -(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	20	NO	YES	YES	.35

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 2

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSO
Father's Attitude Toward School (DAD FEEL SCHL)-(1= Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	18	NO	YES	YES	.35
Mother's Attitude Toward Program (MOM FEEL PRGM)-(1= Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	21	NO	YES	YES	.35
Mother's Attitude Toward School (MOM FEEL SCHL)-(1= Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	19	NO	YES	YES	.35
6. TEACHER EVALUATION OF STUDENTS					
Attendance (ATTN DNCE). Average per cent of time present: (1=<85, 2=85-89, 3=90-94, 4=95-99, 5=>99)	31	NO	YES	YES	.15
Average Overall Grade (AVER GRDE)-(1=F, 2=D, 3=C, 4=B, 5=A)	22	YES	NO	NO	.05
Class Participation (INVL IN CLAS)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	10	NO	YES	YES	.30
Classroom Behavior (CON DUCT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	11	NO	YES	YES	.30
Current Math Grade (CURR MATH GRDE)-(1=E, 2=D, 3=C, 4=B, 5=A)	25	NO	YES	YES	.05
Distractability (DIST RACT BLTY) (1=very high, 2=high, 3=moderate, 4=low, 5=very low)	8	NO	YES	YES	.30
Hyperactivity (HYPR ACTV ITY) (1=very hyperactive, 2=hyperactive, 3=active, 4=somewhat active, 5=placid)	12	NO	YES	YES	.30
Math Ability Evaluation (MATH GR-7 PRE)-(1=E, 2=D, 3=C, 4=B, 5=A)	24	YES	NO	NO	.05
Math Grade on Last Grade 6 Report (MATH GR-6 LAST)-(1= F, 2=D, 3=C, 4=B, 5=A)	23	YES	NO	NO	.05
Peer Interaction (PEER INTR ACT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	9	NO	YES	YES	.30

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 2

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE			PRICE/ PERSON
		FILE	SURV	TREAT	
Perseveration (PERS EVRA TION) (1=very high, 2=high, 3=moderate, 4=low, 5=very low)	13	NO	YES	YES	.30

RFP002:REMAR

APPENDIX V

MATHEMATICS COMMITTEE RESEARCH REPORT: AN OUTLINE

Note: One year ago, the grade seven teachers of Fair City became concerned about the number of students who were unable to cope with the regular mathematics curriculum. Consequently, they formed a committee to study the problem. This is their report.

Title: Fair City Mathematics Teachers Committee Report -
BASIC MATH SKILL DEFICITS--ALTERNATIVE SOLUTIONS

Members: Dee Vision, Matt Ticks, Cal Culus, Lynne Eare and Al Gebra

OUTLINE OF COMMITTEE'S REPORT

I. Discussion of procedure used to formally identify the students in question.

II. Discussion of possible alternative solutions.

III. Recommendations for further action.

I. Identification Procedure

- A. Teachers rejected use of traditional standardized mathematics achievement tests.
- B. Decision was made to utilize criterion-referenced mastery tests.
  - 1. Theory:
    - a. Such tests allowed the testing of specific single concepts.
    - b. Each concept tested presupposed a mastery of the concepts preceding it (e.g., the ability to perform three-digit addition presupposes the ability to perform two-digit addition).
    - c. The tests were founded on the notion of success being equated with complete mastery of the concept (e.g., 70% is no longer considered 'passing'; either a student understands the concept (100%) or he doesn't (0%) - barring careless errors).
    - d. The tests were short and easily administered and checked.
  - 2. Practice:
    - a. The committee set the standard level of mastery that they felt was appropriate for seventh grade students in each arithmetic operation.
      - (1) Addition: the ability to perform addition, either horizontally or vertically, with at least three-digit numbers (where blank is a legal digit).
      - (2) Subtraction: the ability to perform subtraction, either horizontally or vertically, with at least three-digit numbers (where blank is a legal digit).

(3) Multiplication: the ability to perform multiplication with at least three-digit multiplicands and two-digit multipliers (where blank is a legal digit).

(4) Division: the ability to perform division with at least three digit dividends and two-digit divisors (where blank is a legal digit).

b. They felt that all students should get 100% on all four tests.

c. The committee generated dozens of problems at the appropriate level for each operation.

d. The problems were entered into a computer file and the computer randomly assigned ten problems to a test, thus an indefinite number of parallel forms of each test can be available; this capacity allows for retesting on a particular operation.

II. Proposed Solutions

A. AUTOMATH (Index 02)

1. Description:

a. Computer program which automatically administers a series of drill-and-practice exercises in the basic computational skills (addition, subtraction, multiplication and division).

b. Lessons range from elementary computation exercises involving single-digit numbers to problems in applied arithmetic which require a high level of skill in decimal arithmetic.

c. The program has a set of computer actuated tape recordings which give oral instructions concomitant with the printed instructions being typed out at the computer terminal.

d. The program automatically keeps track of each student's progress and routes him to exercises which are appropriate to his level of performance.

e. Students would participate in four (4) one-half hour sessions each week under supervision (the administration assigns a supervisor to every 20 students).

f. Computer terminals and services are available for a flat rate of $10/hour of terminal use.

2. Advantages:

a. Motivational aspects of working with a computer.

b. Individualized programming.

c. Independence from reading skill.

d. Concomitant increase in reading ability.

e. Increased self-confidence by virtue of improvement in mathematics and reading.

f. Minimal clerical work required of teacher.

g. Pedagogical suitability of small-step programming for computationally disadvantaged students.

3. Disadvantages:
    a. Potential malfunctioning of equipment with its consequent frustration.
    b. Motivational difficulties involved with having the students miss their regular mathematics class.
    c. Potential boredom of the drill-and-practice approach.
    d. Impersonality resulting from lack of significant pupil/teacher interaction.

B. REMEDIAL MATHEMATICS TEACHER (Index 03)

1. Description:
    a. Special teacher hired to work with computationally disadvantaged students.
    b. Teacher will begin working with each student at his own level and student advances at his own rate.
    c. Students will participate in four (4) one-half hour sessions each week (the administration assigns a teacher to every 20 students).
    d. The teacher must be paid $15/week/pupil.
2. Advantages:
    a. Individualized program.
    b. Increased student self-confidence by virtue of improvement in mathematics.
    c. Personalized approach to remediation.
    d. Possibility for supplemental peer instruction.
3. Disadvantages:
    a. All clerical accounting must be done by teacher.
    b. Motivational difficulties involved in missing regular mathematics class.
    c. Difficulty involved in truly individualizing with more than one student.
    d. Necessity of finding appropriate materials for each student (time consuming).

C. IRA (Index 04)

1. Description:
    a. Programmed text that administers a series of drill-and-practice exercises in basic computational skills (addition, subtraction, multiplication and division).
    b. Lessons range from elementary computation exercises involving single-digit numbers to problems in applied arithmetic which require a high level of skill in decimal arithmetic.

   - c. Publishers claim that the text is written in such a way that even poor readers can work independently.
   - d. Workbook is written in branching format so that each student is routed to exercises which are appropriate to his level of performance.
   - e. Students would participate in four (4) one-half hour sessions each week under a supervising teacher assistant (the administration assigns a supervisor to every 20 students).
   - f. Consumable text costs $20/student; the supervising teacher assistant is paid $10/week/pupil.

2. Advantages:
   - a. Claimed independence from reading skill.
   - b. Increased self-confidence by virtue of improvement in mathematics.
   - c. Pedagogical suitability of programming philosophy to remedial students.

3. Disadvantages:
   - a. Motivational difficulties involved in missing regular mathematics class.
   - b. Potential boredom of the drill-and-practice approach.
   - c. Impersonality resulting from lack of significant pupil/teacher interaction.
   - d. Necessity of clerical accounting.

III. Recommendations

- A. Ascertain which students are indeed computationally disadvantaged.
- B. Experiment with the proposed programs.
- C. Select a specific approach for Fair City.

FEHR - PRACTICUM

Request For Proposals

For

EXTENDED SCHOOL YEAR (EXTSY)

RFP003

©

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OEG-0-72--529

LEVERNE S. COLLET
4215A SCHOOL OF EDUCATION BUILDING
UNIVERSITY OF MICHIGAN

FEHR-PRACTICUM REQUEST FOR PROPOSALS (RFP)
RFP003:EXTENDED SCHOOL YEAR

The Fair City Board of Education is soliciting proposals for the field evaluation of two extended school year schedules designed to optimize the use of our school plants. Specific details of the programs to be evaluated are given in the accompanying description and its various appendices.

In general, projects will be funded in two separate phases. In phase I, a team is awarded a planning grant which will enable them to explore the extent and severity of the problem and to develop a proposal for an experimental study of the effects of the two available remedial programs as compared to present classroom practice. When an adequate proposal has been developed, the team will then be funded for phase II, in which they actually carry out the proposed research. A detailed description of the specific form and contents of the request for a planning grant and the research proposal are given in the Players' Instructions. In either case, the level of funding is subject to negotiation with the game manager.

A detailed description of the tasks involved in each phase of the project is provided in the INSTRUCTIONS section of the FEHR-PRACTICUM Players' Handbook. However, the time available and the needs of the players involved in a particular game vary from location to location. For that reason, the projects which may be funded under this RFP will vary widely in their scope, complexity, and degree of sophistication. The level of complexity expected from your team for this particular problem is specified in the itemized list of the work to be accomplished which appears later in this document.

The remainder of this RFP document is organized into three section. The first section, entitled Problem Description, provides an overview of the problem, and describes the particular treatments (programs), research subjects, and variables which may be used in your study. In addition, it provides specific references to various sources of additional information. The second section provides a detailed list of the tasks to be performed by your team. The third section is a set of appendices providing detailed data on the various components described in section I. A table of contents appears at the beginning of this section.

PROBLEM DESCRIPTION: EXTENDED SCHOOL YEAR (EXTSY)

The Problem: The present school schedule was designed when Fair City was basically an agricultural community, and children were needed at home during the summer. The social and economic structure of the city no longer need a summer work force of students. The question for Fair City is how best to change the school schedule to meet the needs of today. The Board of Education is considering instituting an Extended School Year (EXTSY) which would have the schools in operation all year around. The Board believes an EXTSY plan would have significant economic as well as educational benefits. Unfortunately, the tradition for summers off remains even though the need no longer exists. Consequently, one of the determining factors in the success of a new schedule may be parent and student attitude toward such a change. Before committing themselves to an EXTSY the Board would like to make an empirical field evaluation of two plans recommended by the Feasibility Committee. Specific information about the plans appears in Appendix V.

The Research Population: The Board of Education has decided to initially try the EXTSY with the elementary schools, so this is the population you will be concerned with. There are 12,393 students attending the 21 elementary schools in Fair City. See Appendix II for a complete listing of the population.

Available Variables: In this problem there are 56 measurable variables. In addition to the usual social variables (race, sex, etc.), these include the responses of students, parents, and teachers to questions about their feelings towards the available plans. Achievement scores and measures reflecting teacher assessments (e.g., grades) are also available. The complete list of variables appears in Appendix IV.

Available Treatments: Two different EXTSY treatments are available: (1) the 45-15 Plan, and (2) the Continuous Progress Cycling Plan. Descriptions of these can be found in the Feasibility Committee Report, Appendix V. In this problem, treatment must be given to an entire school, rather than to individual students.

Previous Research: Reports of previous studies in this area are available in the Information Bank. See Appendix I for a list of titles.

CHECKLIST OF TASKS TO BE PERFORMED

Since the work to be accomplished under this RFP varies from location to location, your Game Manager has placed a ( ) before the particular items for which your team is responsible in the PRACTICUM. (If no items are checked, see your Game Manager before proceeding.) A detailed explanation of how to accomplish each task appears in the Instructions section on the page indicated at right. Tasks marked with an asterisk (*) are mandatory in every PRACTICUM. Before beginning, each player should study, interrelate, and synthesize the information contained in the RFP, its various appendices, and the relevant parts of the Fair City Booklet.

Assigned Tasks		Description of Task	Instructions Page
__*__	(1)	Each player should submit an Orientation Questionnaire to the Game Manager. The specific question to be answered are in the INSTRUCTIONS.	1
__*__	(2)	Form teams as directed by the Game Manager. The following assignments and requirements apply throughout this PRACTICUM: Team salary: $_____ per day. Costs are to be paid as indicated below: ___(a) ignore all costs ___(b) pay costs by check ___(c) pay costs with computer receipts Requests for file searches, survey and treatments should be: ___(a) entered by the team via PROMPTS ___(b) entered by the team via punch cards ___(c) written on the appropriate form and submitted to the Game Manager A Log of research activities: ___(a) to be kept by each player ___(b) to be kept by each team ___(c) no long necessary	1
__*__	(3)	Operationalize the problem observing the following restrictions: Literature: ___no review necessary ___Information Bank only ___Information Bank and regular library Definition: ___Problem definition provided by Game Manager ___complete problem definition form	3-5

Assigned Tasks		Description of Task	Instructions Page
_____	(4)	Determining Extent and Severity of the Problem ___4.1 Submit a Request for a Planning Grant on the form provided Due Date:_______________________ Maximum Grant $_________________ ___4.2 Run File Search and/or Survey Maximum sample size:___________ Maximum number of variables____ (___independent; ___dependent) ___4.3 Analyze the data from 4.2 using appropriate statistical procedures ___4.4 Formal Problem Description (first draft). To be presented for critiquing by the other teams on (date)____________________________	5-7
_____	(5)	Funds are available for identifying a Pool of Research Subjects for Treatments ___Yes; ___No	7
_____	(6)	Empirical Evaluation of the Education Treatments ___6.1 Submit a Research Proposal to the Game Manager. The proposal must meet these restrictions and requirements: Maximum number of variables per observation: Dependent_____; Independent_____; Total_____ Maximum number of observation times_____ Maximum number of research subjects _____ Date proposal must be submitted_____ The maximum project budget is: $_____ The proposal should contain each item checked below: ___(a) abstract of the proposal ___(b) introduction and overview of problem	7-9

Assigned Tasks	Description of Task	Instructions Page

___(c) a review of the related literature from:
  ___the Information Bank only
  ___both the Information Bank and library
___(d) a formal statement of the problem
___(e) a description of the procedures to be used
___(f) a schedule of activities
___(g) an itemized budget

The writing style for the proposal is checked below:

___(a) brief outline
___(b) detailed outline
___(c) formal narrative

___6.2 Using an appropriate method, divide your sample into treatment groups, observing the restrictions given in Task 3. Run the experiment on the FEHR Data Generator. Data will be output on:

___(a) printed copy only
___(b) printed copy and punch cards
___(c) printed copy and the team's computer file

___6.3 Analyze and interpret the data from Step 6.2 using appropriate statistical procedures. Record restrictions (to be announced by the Game Manager) below:

____

____

___6.4 Submit a final report to the Game Manager. The report should contain the proposal items checked in 6.1 plus the items checked below:

___(h) the results of the field test
___(i) a summary of the statistical findings
___(j) a discussion of results culminating in an educational decision
___(k) a discussion of the limitations of the project

Assigned Tasks	Description of Task	Instructions Page
	___(l) recommendations for future research ___(m) an appendix containing the log(s) of activities The writing style of the final report should be: ___(a) brief outline ___(b) detailed outline ___(c) formal narrative Final report due date:_____________	
_____ (7)	Attend a Consolidation Session (at a time to be announced by the Game Manager) to discuss the strengths and weaknesses of the strategies employed by your team, and any other teams which are attacking the same problem	9

APPENDICES
TABLE OF CONTENTS

APPENDIX I INDEX TO INFORMATION BANK MATERIAL Page 8-10
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APPENDIX I

CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 3 EXTENDED SCHOOL YEAR

1. References Directly Related To This Problem.

Alam, Sami J. "The Four-Quarter Plan and Its Feasibility for the Port Huron Area School District." Port Huron Area School District, 1970.

Ann Arbor, Mich. "The Ann Arbor Split-Trimester Extended School Year Plan." Public Schools of the City of Ann Arbor, 1970.

Capital City. "Statement on Extended School Year."

Driscoll, Thomas F. "Movement Growing for Year-Round Schools." *Ann Arbor News*, July 25, 1971, p. 12.

Heald, J. Et al. Feasibility of Extending the Educational Experiences of School Students in Haslett, Okemos, and East Lansing, Michigan. Report Of The Extended School Year Committee of the School Districts of East Lansing, Okemos and Haslett, 1969.

Hermansen, K.L. And Gove, J.R. *The Year-Round School*. Hamden, Conn.: Linnet Books, 1971.

Hoover, Dennis "Year-Round Classes Seen Around Corner." *The Dallas Morning News* (December 19, 1966).

"New Trend: Year-Round Schools." *U.S. News and World Report*. July 26, 1971, 35-37.

Rice, A, "Atlanta Schoolman Discusses His Year-Round School Program." *Nations Schools*, Vol. 86, No. 6, 1970, 12.

Start Teaching All Year. Freeland, Michigan Community Schools Extended School Year Committee, 710 Powley Drive, Freeland, Michigan 48623, 1970.

Thomas, Steven C. "Valley View's 45-15 Year-Round School." *In Today's Education*, November, 1971, V. 60, No. 8, p. 42-43.

Utica, Mich. "Four-Quarter Staggered School Year." Utica Community Schools, 1970.

"Year Round School: Is it Feasible?" Northville Public Schools, Northville, Mich. 1970.

2. Auxiliary References.

Elementary School Information (Fair City).

St. John, Nancy. "Thirty-Six Teachers: Their Characteristics and Outcomes for Black and White Pupils." *American Educational Research Journal*, 1971, 8(4), 635-648.

Teacher Salary Scale - Fair City Public Schools.

APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 3
EXTENDED SCHOOL YEAR

3. Descriptive and Normative Information About Variables (Tests).

California Test of Mental Maturity (Short Form).

California Test of Personality.

Deutsch Socio-Economic Status Index

Metropolitan Achievement Test.

Otis-Lennon Mental Ability Test.

Preliminary SAT & CTMM Means for Elementary Schools - Feasibility Committee

Stanford Achievement Tests.

Stanford-Binet Intelligence Scale.

4. Test Critiques, Validation Studies, etc.

Anderson, H.B. And Leton, D.A. "Factor Analysis of the California Test of Mental Maturity." Education and Psychological Measurement, 1964, 24(3), 513-523.

Brim, O.B. "American Attitudes Toward Intelligence Tests." American Psychologist, 1965, 20, 125-130.

Churchill, W.D. And Smith, S.E. "The Relationship of the 1960 Revised Stanford-Binet Intelligence Scale to Intelligence and Achievement Test Scores Over a Three-Year Period." Educational and Psychological Measurement, 1966, 26(4), 1015-1020.

Deloria, D. "The Stanford-Binet in the Ypsilanti Curriculum. Why?" High Scope Educational Research Foundation.

Grotelveschen, A. "Otis-Lennon Mental Ability Test." Journal of Educational Measurement, 1969, 6(2), 111-113.

Himelstein, P. "Research with the Stanford-Binet Form L-M: The First Five Years." Psychological Bulletin, 1966, 65(3), 156-164.

Hirshoren, A. "A Comparison of the Predictive Validity of the Revised Stanford-Binet Intelligence Scale and the Illinois Test of Psycholinguistic Abilities." Exceptional Children, 1969, 35(3), 517-521.

Johnson, G.B. "Factors to be Considered in the Interpretation of Intelligence Test Scores." The Elementary School Journal, 1953, 1-8.

Knief, L.M. And Stroud, I.B. "Intercorrelations Among Various Intelligence, Achievement, and Social Class Scores." Journal of Educational Psychology, 1959, 50(3), 117-120.

APPENDIX I

CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 3 EXTENDED SCHOOL YEAR

Smith, A.E. "Otis-Lennon Mental Ability Test." Journal of Counseling Psychology, 1970, 17(1), 91-92.

RESEARCH POPULATION: APPENDIX II

The research population for the Extended School Year (EXTSY) problem consists of all students in the Fair City Elementary Schools. Each of these students has an ID consisting of three sections. The first two digits from the left determine the school, the next two digits determine the class and the last three digits determine the individual child. For example, 02-17-009 identifies the Pumpkineater school, class 17 and the 9th child. The hyphens are used only for clarity. When entering this student's ID into the computer, one would type 0217009. If you want to measure all the students in a class all you have to do is enter zeroes in the spot for the individual student digits. For example, 0206000 would provide the variable score for all students in the sixth class of the Pumpkineater school. This number is entered into the computer as one ID. When you enter the ID in the computer it represents one of the ID's allotted to a line but you receive the results for that whole class. There are 12,393 separate student ID's in the research population in this problem, as illustrated below.

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
L.J. Horner	01	K(am)	01	20	01-01-001 to 01-01-020
		K(pm)	02	20	01-02-001 to 01-02-020
		1	03	37	01-03-001 to 01-03-037
		2	04	36	01-04-001 to 01-04-036
		3	05	34	01-05-001 to 01-05-034
		3	06	34	01-06-001 to 01-06-034
		4	07	32	01-07-001 to 01-07-032
		4	08	31	01-08-001 to 01-08-031
		5	09	31	01-09-001 to 01-09-031
		5	10	30	01-10-001 to 01-10-030
		6	11	31	01-11-001 to 01-11-031
		6	12	31	01-12-001 to 01-12-031
P.P. Pumpkineater	02	K(am)	01	20	02-01-001 to 02-01-020
		K(am)	02	21	02-02-001 to 02-02-021
		K(pm)	03	19	02-03-001 to 02-03-019
		K(pm)	04	20	02-04-001 to 02-04-020
		1	05	27	02-05-001 to 02-05-027
		1	06	28	02-06-001 to 02-06-028
		1	07	28	02-07-001 to 02-07-028
		1	08	28	02-08-001 to 02-08-028
		2	09	29	02-09-001 to 02-09-029
		2	10	30	02-10-001 to 02-10-030
		2	11	30	02-11-001 to 02-11-030
		2	12	30	02-12-001 to 02-12-030
		3	13	30	02-13-001 to 02-13-030
		3	14	30	02-14-001 to 02-14-030
		3	15	30	02-15-001 to 02-15-030
		3	16	31	02-16-001 to 02-16-031
		4	17	29	02-17-001 to 02-17-029
		4	18	30	02-18-001 to 02-18-030

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
P.P. Pumpkin-eater (cont)		4	19	31	02-19-001 to 02-19-031
		4	20	31	02-20-001 to 02-20-031
		5	21	30	02-21-001 to 02-21-030
		5	22	31	02-22-001 to 02-22-031
		5	23	32	02-23-001 to 02-23-032
		5	24	32	02-24-001 to 02-24-032
		6	25	32	02-25-001 to 02-25-032
		6	26	33	02-26-001 to 02-26-033
		6	27	33	02-27-001 to 02-27-033
		6	28	33	02-28-001 to 02-28-033
H.D. Dock	05	K(am)	01	22	05-01-001 to 05-01-022
		K(am)	02	23	05-02-001 to 05-02-023
		K(pm)	03	24	05-03-001 to 05-03-024
		K(pm)	04	23	05-04-001 to 05-04-023
		1	05	31	05-05-001 to 05-05-031
		1	06	31	05-06-001 to 05-06-031
		1	07	31	05-07-001 to 05-07-031
		2	08	30	05-08-001 to 05-08-030
		2	09	31	05-09-001 to 05-09-031
		2	10	32	05-10-001 to 05-10-032
		3	11	31	05-11-001 to 05-11-031
		3	12	32	05-12-001 to 05-12-032
		3	13	31	05-13-001 to 05-13-031
		4	14	30	05-14-001 to 05-14-030
		4	15	32	05-15-001 to 05-15-032
		4	16	31	05-16-001 to 05-16-031
		5	17	31	05-17-001 to 05-17-031
		5	18	31	05-18-001 to 05-18-031
		5	19	31	05-19-001 to 05-19-031
		6	20	30	05-20-001 to 05-20-030
		6	21	31	05-21-001 to 05-21-031
		6	22	32	05-22-001 to 05-22-032
M. Goose	06	K(am)	01	22	06-01-001 to 06-01-022
		K(am)	02	23	06-02-001 to 06-02-023
		K(pm)	03	23	06-03-001 to 06-03-023
		K(pm)	04	24	06-04-001 to 06-04-024
		1	05	31	06-05-001 to 06-05-031
		1	06	32	06-06-001 to 06-06-032
		1	07	31	06-07-001 to 06-07-031
		2	08	30	06-08-001 to 06-08-030
		2	09	31	06-09-001 to 06-09-031
		2	10	32	06-10-001 to 06-10-032
		3	11	32	06-11-001 to 06-11-032

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
M. Goose (cont.)	06	3	12	33	06-12-001 to 06-12-033
		3	13	32	06-13-001 to 06-13-032
		4	14	32	06-14-001 to 06-14-032
		4	15	32	06-15-001 to 06-15-032
		4	16	32	06-16-001 to 06-16-032
		5	17	32	06-17-001 to 06-17-032
		5	18	31	06-18-001 to 06-18-031
		5	19	31	06-19-001 to 06-19-031
		6	20	31	06-20-001 to 06-20-031
		6	21	32	06-21-001 to 06-21-032
		6	22	31	06-22-001 to 06-22-031
Knaveofhearts	03	K(am)	01	20	03-01-001 to 03-01-020
		K(am)	02	19	03-02-001 to 03-02-019
		K(pm)	03	20	03-03-001 to 03-03-020
		K(pm)	04	21	03-04-001 to 03-04-021
		1	05	27	03-05-001 to 03-05-027
		1	06	27	03-06-001 to 03-06-027
		1	07	28	03-07-001 to 03-07-028
		2	08	28	03-08-001 to 03-08-028
		2	09	29	03-09-001 to 03-09-029
		2	10	30	03-10-001 to 03-10-030
		3	11	29	03-11-001 to 03-11-029
		3	12	30	03-12-001 to 03-12-030
		3	13	30	03-13-001 to 03-13-030
		4	14	31	03-14-001 to 03-14-031
		4	15	31	03-15-001 to 03-15-031
		4	16	32	03-16-001 to 03-16-032
		5	17	32	03-17-001 to 03-17-032
		5	18	33	03-18-001 to 03-18-033
		5	19	33	03-19-001 to 03-19-033
		6	20	33	03-20-001 to 03-20-033
		6	21	33	03-21-001 to 03-21-033
		6	22	34	03-22-001 to 03-22-034
Jackandjill	04	K(am)	01	26	04-01-001 to 04-01-026
		K(am)	02	25	04-02-001 to 04-02-025
		K(pm)	03	26	04-03-001 to 04-03-026
		K(pm)	04	25	04-04-001 to 04-04-025
		1	05	35	04-05-001 to 04-05-035
		1	06	35	04-06-001 to 04-06-035
		1	07	34	04-07-001 to 04-07-034
		2	08	34	04-08-001 to 04-08-034
		2	09	34	04-09-001 to 04-09-034
		2	10	34	04-10-001 to 04-10-034
		3	11	30	04-11-001 to 04-11-030

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
Jackandjill (cont.)	04	3	12	30	04-12-001 to 04-12-030
		3	13	29	04-13-001 to 04-13-029
		3	14	29	04-14-001 to 04-14-029
		4	15	29	04-15-001 to 04-15-029
		4	16	30	04-16-001 to 04-16-030
		4	17	31	04-17-001 to 04-17-031
		4	18	31	04-18-001 to 04-18-031
		5	19	30	04-19-001 to 04-19-030
		5	20	30	04-20-001 to 04-20-030
		5	21	29	04-21-001 to 04-21-029
		5	22	29	04-22-001 to 04-22-029
		6	23	30	04-23-001 to 04-23-030
		6	24	30	04-24-001 to 04-24-030
		6	25	30	04-25-001 to 04-25-030
		6	26	31	04-26-001 to 04-26-031
Lamb	07	K(am)	01	23	07-01-001 to 07-01-023
		K(am)	02	23	07-02-001 to 07-02-023
		K(pm)	03	24	07-03-001 to 07-03-024
		K(pm)	04	22	07-04-001 to 07-04-022
		1	05	30	07-05-001 to 07-05-030
		1	06	31	07-06-001 to 07-06-031
		1	07	32	07-07-001 to 07-07-032
		2	08	33	07-08-001 to 07-08-033
		2	09	32	07-09-001 to 07-09-032
		2	10	33	07-10-001 to 07-10-033
		3	11	35	07-11-001 to 07-11-035
		3	12	34	07-12-001 to 07-12-034
		3	13	33	07-13-001 to 07-13-033
		4	14	27	07-14-001 to 07-14-027
		4	15	28	07-15-001 to 07-15-028
		4	16	29	07-16-001 to 07-16-029
		4	17	28	07-17-001 to 07-17-028
		5	18	29	07-18-001 to 07-18-029
		5	19	28	07-19-001 to 07-19-028
		5	20	28	07-20-001 to 07-20-028
		5	21	27	07-21-001 to 07-21-027
		6	22	27	07-22-001 to 07-22-027
		6	23	27	07-23-001 to 07-23-027
		6	24	28	07-24-001 to 07-24-028
		6	25	28	07-25-001 to 07-25-028
L.M. Muffet	08	K(am)	01	17	08-01-001 to 08-01-017
		K(am)	02	18	08-02-001 to 08-02-018
		K(pm)	03	19	08-03-001 to 08-03-019
		K(pm)	04	18	08-04-001 to 08-04-018
		1	05	33	08-05-001 to 08-05-033
		1	06	32	08-06-001 to 08-06-032
		2	07	32	08-07-001 to 08-07-032
		2	08	31	08-08-001 to 08-08-031

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
L.M. Muffet (cont.)	08	K(am)	01	17	08-01-001 to 08-01-017
		K(am)	02	18	08-02-001 to 08-02-018
		K(pm)	03	19	08-03-001 to 08-03-019
		K(pm)	04	18	08-04-001 to 08-04-018
		1	05	33	08-05-001 to 08-05-033
		1	06	32	08-06-001 to 08-06-032
		2	07	32	08-07-001 to 08-07-032
		2	08	31	08-08-001 to 08-08-031
		3	09	32	08-09-001 to 08-09-032
		3	10	32	08-10-001 to 08-10-032
		4	11	31	08-11-001 to 08-11-031
		4	12	32	08-12-001 to 08-12-032
		5	13	32	08-13-001 to 08-13-032
		5	14	31	08-14-001 to 08-14-031
		6	15	32	08-15-001 to 08-15-032
		6	16	33	08-16-001 to 08-16-033
J. Sprat	09	K(am)	01	16	09-01-001 to 09-01-016
		K(am)	02	17	09-02-001 to 09-02-017
		K(pm)	03	18	09-03-001 to 09-03-018
		K(pm)	04	17	09-04-001 to 09-04-017
		1	05	24	09-05-001 to 09-05-024
		1	06	25	09-06-001 to 09-06-025
		1	07	25	09-07-001 to 09-07-025
		2	08	25	09-08-001 to 09-08-025
		2	09	24	09-09-001 to 09-09-024
		2	10	26	09-10-001 to 09-10-026
		3	11	24	09-11-001 to 09-11-024
		3	12	24	09-12-001 to 09-12-024
		3	13	23	09-13-001 to 09-13-023
		4	14	29	09-14-001 to 09-14-029
		4	15	29	09-15-001 to 09-15-029
		5	16	28	09-16-001 to 09-16-028
		5	17	29	09-17-001 to 09-17-029
		6	18	27	09-18-001 to 09-18-027
		6	19	27	09-19-001 to 09-19-027
Calicocat	10	K(am)	01	21	10-01-001 to 10-01-021
		K(am)	02	20	10-02-001 to 10-02-020
		K(pm)	03	19	10-03-001 to 10-03-019
		K(pm)	04	20	10-04-001 to 10-04-020
		1	05	31	10-05-001 to 10-05-031
		1	06	30	10-06-001 to 10-06-030
		1	07	29	10-07-001 to 10-07-029
		2	08	25	10-08-001 to 10-08-025
		2	09	26	10-09-001 to 10-09-026
		2	10	25	10-10-001 to 10-10-025
		2	11	24	10-11-001 to 10-11-024

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDNET ID'S AVAILABLE IN THE CLASS
Calicocat (cont.)		3	12	27	10-12-001 to 10-12-027
		3	13	28	10-13-001 to 10-13-028
		3	14	29	10-14-001 to 10-14-029
		3	15	28	10-15-001 to 10-15-028
		4	16	30	10-16-001 to 10-16-030
		4	17	30	10-17-001 to 10-17-030
		4	18	31	10-18-001 to 10-18-031
		4	19	31	10-19-001 to 10-19-031
		5	20	32	10-20-001 to 10-20-032
		5	21	33	10-21-001 to 10-21-033
		5	22	33	10-22-001 to 10-22-033
		5	23	33	10-23-001 to 10-23-033
		6	24	34	10-24-001 to 20-24-034
		6	25	34	10-25-001 to 10-25-034
		6	26	34	10-26-001 to 10-26-034
		6	27	35	10-27-001 to 10-27-035
T. Blindmice	11	K(am)	01	19	11-01-001 to 11-01-019
		K(am)	02	20	11-02-001 to 11-02-020
		K(pm)	03	21	11-03-001 to 11-03-021
		K(pm)	04	20	11-04-001 to 11-04-020
		1	05	27	11-05-001 to 11-05-027
		1	06	28	11-06-001 to 11-06-028
		1	07	27	11-07-001 to 11-07-027
		2	08	28	11-08-001 to 11-08-028
		2	09	28	11-09-001 to 11-09-028
		2	10	29	11-10-001 to 11-10-029
		3	11	30	11-11-001 to 11-11-030
		3	12	31	11-12-001 to 11-12-031
		3	13	32	11-13-001 to 11-13-032
		4	14	32	11-14-001 to 11-14-032
		4	15	33	11-15-001 to 11-15-033
		4	16	32	11-16-001 to 11-16-032
		5	17	27	11-17-001 to 11-17-027
		5	18	28	11-18-001 to 11-18-028
		5	19	27	11-19-001 to 11-19-027
		5	20	28	11-20-001 to 11-20-028
		6	21	29	11-21-001 to 11-21-029
		6	22	30	11-22-001 to 11-22-030
		6	23	30	11-23-001 to 11-23-030
		6	24	30	11-24-001 to 11-24-030
H.D. Diddle	12	K(am)	01	23	12-01-001 to 12-01-023
		K(am)	02	24	12-02-001 to 12-02-024
		K(pm)	03	22	12-03-001 to 12-03-022
		K(pm)	04	23	12-04-001 to 12-04-023

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDNET ID'S AVAILABLE IN THE CLASS
H.D. Diddle (cont.)		1	05	30	12-05-001 to 12-05-030
		1	06	31	12-06-001 to 12-06-031
		1	07	30	12-07-001 to 12-07-030
		2	08	29	12-08-001 to 12-08-029
		2	09	30	12-09-001 to 12-09-030
		2	10	29	12-10-001 to 12-10-029
		3	11	28	12-11-001 to 12-11-028
		3	12	29	12-12-001 to 12-12-029
		3	13	30	12-13-001 to 12-13-030
		4	14	29	12-14-001 to 12-14-029
		4	15	29	12-15-001 to 12-15-029
		4	16	30	12-16-001 to 12-16-030
		5	17	28	12-17-001 to 12-17-028
		5	18	30	12-18-001 to 12-18-030
		5	19	29	12-19-001 to 12-19-029
		6	20	29	12-20-001 to 12-20-029
		6	21	30	12-21-001 to 12-21-030
		6	22	29	12-22-001 to 12-22-029
O.K. Cole	13	K(am)	01	25	13-01-001 to 13-01-025
		K(am)	02	26	13-02-001 to 13-02-026
		K(pm)	03	25	13-03-001 to 13-03-025
		K(pm)	04	25	13-04-001 to 13-04-025
		1	05	33	13-05-001 to 13-05-033
		1	06	34	13-06-001 to 13-06-034
		1	07	35	13-07-001 to 13-07-035
		2	08	26	13-08-001 to 13-08-026
		2	09	27	13-09-001 to 13-09-027
		2	10	26	13-10-001 to 13-10-026
		2	11	28	13-11-001 to 13-11-028
		3	12	29	13-12-001 to 13-12-029
		3	13	28	13-13-001 to 13-13-028
		3	14	30	13-14-001 to 13-14-030
		3	15	29	13-15-001 to 13-15-029
		4	16	28	13-16-001 to 13-16-028
		4	17	27	13-17-001 to 13-17-027
		4	18	29	13-18-001 to 13-18-029
		4	19	28	13-19-001 to 13-19-028
		5	20	31	13-20-001 to 13-20-031
		5	21	30	13-21-001 to 13-21-030
		5	22	32	13-22-001 to 13-22-032
		5	23	32	13-23-001 to 13-23-032
		6	24	32	13-24-001 to 13-24-032
		6	25	33	13-25-001 to 13-25-033
		6	26	34	13-26-001 to 13-26-034

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
Shaftoe	14	K(am)	01	25	14-01-001 to 14-01-025
		K(am)	02	26	14-02-001 to 14-02-026
		K(pm)	03	25	14-03-001 to 14-03-025
		K(pm)	04	26	14-04-001 to 14-04-026
		1	05	33	14-05-001 to 14-05-033
		1	06	33	14-06-001 to 14-06-033
		1	07	32	14-07-001 to 14-07-032
		2	08	28	14-08-001 to 14-08-028
		2	09	27	14-09-001 to 14-09-027
		2	10	28	14-10-001 to 14-10-028
		2	11	29	14-11-001 to 14-11-029
		3	12	31	14-12-001 to 14-12-031
		3	13	30	14-13-001 to 14-13-030
		3	14	33	14-14-001 to 14-14-033
		3	15	33	14-15-001 to 14-15-033
		4	16	29	14-16-001 to 14-16-029
		4	17	30	14-17-001 to 14-17-030
		4	18	29	14-18-001 to 14-18-029
		4	19	31	14-19-001 to 14-19-031
		5	20	28	14-20-001 to 14-20-028
		5	21	27	14-21-001 to 14-21-027
		5	22	26	14-22-001 to 14-22-026
		5	23	28	14-23-001 to 14-23-028
		6	24	32	14-24-001 to 14-24-032
		6	25	34	14-25-001 to 14-25-034
		6	26	33	14-26-001 to 14-26-033
M.M. Contrary	15	K(am)	01	25	15-01-001 to 15-01-025
		K(pm)	02	26	15-02-001 to 15-02-026
		1	03	24	15-03-001 to 15-03-024
		1	04	25	15-04-001 to 15-04-025
		2	05	24	15-05-001 to 15-05-024
		2	06	24	15-06-001 to 15-06-024
		3	07	24	15-07-001 to 15-07-024
		3	08	23	15-08-001 to 15-08-023
		4	09	24	15-09-001 to 15-09-024
		4	10	24	15-10-001 to 15-10-024
		5	11	24	15-11-001 to 15-11-024
		5	12	24	15-12-001 to 15-12-024
		6	13	24	15-13-001 to 15-13-024
		6	14	24	15-13-001 to 15-13-024
Inashoe	16	K(am)	01	23	16-01-001 to 16-01-023
		K(am)	02	22	16-02-001 to 16-02-022
		K(pm)	03	24	16-03-001 to 16-03-024
		K(pm)	04	23	16-04-001 to 16-04-023

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
Inashoe (cont.)	16	1	05	32	16-05-001 to 16-05-032
		1	06	31	16-06-001 to 16-06-031
		1	07	30	16-07-001 to 16-07-030
		2	08	31	16-08-001 to 16-08-031
		2	09	32	16-09-001 to 16-09-032
		2	10	30	16-10-001 to 16-10-030
		3	11	32	16-11-001 to 16-11-032
		3	12	32	16-12-001 to 16-12-032
		3	13	33	16-13-001 to 16-13-033
		4	14	32	16-14-001 to 16-14-032
		4	15	31	16-15-001 to 16-15-031
		4	16	32	16-16-001 to 16-16-032
		5	17	32	16-17-001 to 16-17-032
		5	18	31	16-18-001 to 16-18-031
		5	19	31	16-19-001 to 16-19-031
		6	20	32	16-20-001 to 16-20-032
		6	21	33	16-21-001 to 16-21-033
		6	22	33	16-22-001 to 16-22-033
S. Simon	17	K(am)	01	25	17-01-001 to 17-01-025
		K(am)	02	26	17-02-001 to 17-02-026
		K(pm)	03	25	17-03-001 to 17-03-025
		K(pm)	04	26	17-04-001 to 17-04-026
		1	05	34	17-05-001 to 17-05-034
		1	06	36	17-06-001 to 17-06-036
		1	07	35	17-07-001 to 17-07-035
		2	08	33	17-08-001 to 17-08-033
		2	09	34	17-09-001 to 17-09-034
		2	10	32	17-10-001 to 17-10-032
		3	11	31	17-11-001 to 17-11-031
		3	12	32	17-12-001 to 17-12-032
		3	13	30	17-13-001 to 17-13-030
		4	14	36	17-14-001 to 17-14-036
		4	15	36	17-15-001 to 17-15-036
		5	16	37	17-16-001 to 17-16-037
		5	17	36	17-17-001 to 17-17-036
		6	18	35	17-18-001 to 17-18-035
		6	19	37	17-19-001 to 17-19-037
Hubbard	18	K(am)	01	23	18-01-001 to 18-01-023
		K(am)	02	24	18-02-001 to 18-02-024
		K(pm)	03	22	18-03-001 to 18-03-022
		K(pm)	04	23	18-04-001 to 18-04-023
		1	05	32	18-05-001 to 18-05-032
		1	06	30	18-06-001 to 18-06-030
		1	07	31	18-07-001 to 18-07-031

SCHOOL	SCHOOL OR UNIT INDEX	GRADE	CLASS OR SUB-UNIT INDEX	CLASS ENROLLMENT	STUDENT ID'S AVAILABLE IN THE CLASS
Hubbard (cont.)	18	2	08	39	18-08-001 to 18-08-039
		2	09	38	18-09-001 to 18-09-038
		3	10	37	18-10-001 to 18-10-037
		3	11	37	18-11-001 to 18-11-037
		4	12	36	18-12-001 to 18-12-036
		4	13	37	18-13-001 to 18-13-037
		5	14	37	18-14-001 to 18-14-037
		5	15	36	18-15-001 to 18-15-036
		6	16	35	18-16-001 to 18-16-035
		6	17	36	18-17-001 to 18-17-036
Sixpence	19	K(am)	01	26	19-01-001 to 19-01-026
		K(pm)	02	27	19-02-001 to 19-02-027
		1	03	37	19-03-001 to 19-03-037
		1	04	38	19-04-001 to 19-04-038
		2	05	37	19-05-001 to 19-05-037
		2	06	37	19-06-001 to 19-06-037
		3	07	36	19-07-001 to 19-07-036
		3	08	35	19-08-001 to 19-08-035
		4	09	34	19-09-001 to 19-09-034
		4	10	33	19-10-001 to 19-10-033
		5	11	40	19-11-001 to 19-11-040
		6	12	40	19-12-001 to 19-12-040
B.B.B. Sheep	20	K(am)	01	27	20-01-001 to 20-01-027
		K(pm)	02	26	20-02-001 to 20-02-026
		1	03	38	20-03-001 to 20-03-038
		1	04	37	20-04-001 to 20-04-037
		2	05	37	20-05-001 to 20-05-037
		2	06	37	20-06-001 to 20-06-037
		3	07	35	20-07-001 to 20-07-035
		3	08	36	20-08-001 to 20-08-036
		4	09	33	20-09-001 to 20-09-033
		4	10	34	20-10-001 to 20-10-034
		5	11	31	20-11-001 to 20-11-031
		5	12	30	20-12-001 to 20-12-030
		6	13	40	20-13-001 to 20-13-040
L.B. Blue	21	K(am)	01	16	21-01-001 to 21-01-016
		K(pm)	02	17	21-02-001 to 21-02-017
		1	03	34	21-03-001 to 21-03-034
		2	04	33	21-04-001 to 21-04-033
		3	05	34	21-05-001 to 21-05-034
		4	06	35	21-06-001 to 21-06-035
		5	07	36	21-07-001 to 21-07-036
		6	08	36	21-08-001 to 21-08-036

CATALOG OF T[illegible]TMENTS: APPENDIX III

In this problem, every school to be included in the study must receive a separate treatment. Consequently, if you want to give, for example, treatment 02 to more than one school each school must have treatment 02 administered to it separately. What this means in Fair City is that no treatment group can have the student numbers from more than one school in it.

TREATMENT INDEX	TREATMENT NAME	TREATMENT DESCRIPTION	FIXED OVERHEAD COST FOR SETTING UP EXPERIMENT PER SCHOOL	SET UP COSTS PER STUDENT	YEARLY MAINTENANCE COSTS PER SCHOOL	MAINTENANCE COST PER YEAR PER YEAR
01	Present practice	No change in schedule.	$0.00	$0.00	$0.00	$0.00
02	45-15 Plan	Four terms of nine weeks with 3-week vacations inbetween.	$7000.00	$50.00	$2000.-	$50.00
03	Continuous Progress Plan	Students attend classes for ten-week periods totaling 196-200 days a year.	$15,000.00	$50.00	$2000.-	$50.00

Treatment Times. The time units in this problem are years. Time 00 represents the first day of the respective schedules. Time 01 represents the end of the first year and so on. Treatments may be administered for any number of years from 00 to 03, inclusive.

Observation or Testing Time. This refers to the time at which variables are observed during a treatment. The observation times for this problem are 00, 01, 02, 03. Illustrated in the chart below are the time sequences in this problem. It may be wise to check the chart below when picking variables. For it may happen that variables available at time 00 for a particular class will not, for example, be available at time 02, or vice versa. Note, it is not possible to measure effects of a treatment on fifth and sixth graders at time 03, and 02, respectively, or after, because these students would no longer be in elementary school.

Note 1: Treatment costs refer only to the expenses incurred by the research study; they do not refer to the cost of implementing any of these programs on a permanent basis. Per student costs only refer to those students who will be observed. This does not include the other students who experience the new schedules.

Note: The costs listed above do not include per/person test costs, although those costs will be included in the assessed charge when tests are given during treatments. (See Catalog of Variables for these costs.) There are no other overhead costs for administering tests during treatments.

	TIME 00	TIME 01	TIME 02	TIME 03
Kindergarten	First day of kindergarten	End of kindergarten.	End of first grade.	End of second grade.
First Grade	First day of first grade	End of first grade.	End of second grade.	End of third grade.
Second Grade	First day of second grade	End of second grade.	End of third grade.	End of fourth grade.
Third Grade	First day of third grade	End of third grade.	End of fourth grade.	End of fifth grade.
Fourth Grade	First day of fourth grade	End of fourth grade.	End of fifth grade.	End of sixth grade.
Fifth Grade	First day of fifth grade	End of fifth grade.	End of sixth grade.	Not Available.
Sixth Grade	First day of sixth grade	End of sixth grade.	Not Available	Not Available

CATALOG OF VARIABLES: APPENDIX IV
TABLE OF CONTENTS

Type of Variables

I. ABILITY AND INTELLIGENCE VARIABLES
II. ACHIEVEMENT VARIABLES
III. PERSONALITY VARIABLES
IV. PERSONAL HISTORY VARIABLES
V. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS
VI. TEACHER EVALUATION OF STUDENTS
VII. SCHOOL DESCRIPTION VARIABLES

Note 1: The category, GRADE AVAILABLE, indicates at which grade level the test can be administered.

Note 2: The category, AVAILABLE ON: FILE SURV TREAT, identifies the process by which each individual variable can be retrieved. That is, if there is a "YES" under FILE, the variable can be retrieved via a File Search. If there is a "YES" under TREAT, the variable can be measured during a treatment.

Note 3: The category, PRICE/PERSON, indicates costs of variable scores measured via survey and during treatment ONLY. If the variable is retrieved via File Search, the cost/variable/person is ALWAYS 5¢.

Note 4: Unless otherwise stated, assume that all scores in the files were obtained from tests administered during the orientation sessions held for all students before the new schedule was begun.

Note 5: Assume that all survey data is collected at time 00, which is the first day of all the respective plans. Likewise, all data collected at time 00 during a treatment is collected on this day.

LISTS OF COSTS THAT MAY BE INCURRED IN THIS PROBLEM

File Search

1. Fixed overhead charge for initiating a search	$20.00/per sub-unit
2. Overhead costs for entering sub-unit files	$ 5.00
3. Overhead cost of entering units	$10.00/unit
4. Cost of variable scores	$ 0.05/variable/ person in all classes

Survey

1. Fixed overhead costs for initiating a search	$20.00
2. Overhead costs of administering tests to sub-units	$ 5.00/sub-unit
3. Overhead costs of entering units	$10.00/unit
4. Cost of variable scores	See Catalog of Variables

Secretary

1. Fixed overhead costs for initiating use of secretary	$10.00
2. Cost of secretary per student	$00.10

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 3

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
1. ABILITY AND INTELLIGENCE VARIABLES						
California Test of Mental Maturity:Verbal I.Q. (CTMM VRBL IQ) Numbers are SCALED SCORES.	k-6	47	NO	YES	YES	.20
California Test of Mental Maturity:Non-Verbal I.Q. (CTMM NON- VRBL) Numbers are SCALED SCORES.	k-6	48	NO	YES	YES	.20
Otis Lennon Mental Ability Test (OTIS LNON IQ) Numbers are SCALED SCORES.	k-6	46	YES	YES	YES	.30
Stanford-Binet (S-B) Numbers are SCALED SCORES.	k-6	49	NO	YES	YES	12.65
2. ACHIEVEMENT VARIABLES						
Metropolitan Achievement Tests:Reading (MAT READ) Numbers are RAW SCORES.	1-6	39	NO	YES	YES	.30
Metropolitan Achievement Tests:Word Knowledge (MAT WORD KNOW) Numbers are RAW SCORES.	1-6	40	NO	YES	YES	.30
Metropolitan Achievement Tests:Spelling (MAT SPEL Numbers are RAW SCORES.	2-6	41	NO	YES	YES	.30
Metropolitan Achievement Tests:Mathematical Concepts (MAT MATH CONC) Numbers are RAW SCORES.	1-6	42	NO	YES	YES	.30
Metropolitan Achievement Tests:Mathematical Computation (MAT MATH COMP) NUMBERS ARE RAW SCORES.	2-6	43	NO	YES	YES	.30
Metropolitan Achievement Tests:Science (MAT SCI) Computation (MAT MATH COMP) Numbers are RAW SCORES.	5,6	44	NO	YES	YES	.30
Metropolitan Achievement Tests:Social Studies Information (MAT SS INFO) Numbers are RAW SCORES.	5,6	45	NO	YES	YES	.30
Stanford Achievement Test:Paragraph Meaning (SAT PARA MEAN) Numbers are RAW SCORES.	1-6	31	YES	YES	YES	.30

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 3

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Stanford Achievement Test:Spelling (SAT SPEL) Numbers are RAW SCORES.	1-6	32	YES	YES	YES	.30
Stanford Achievement Test:Word Meaning (SAT WORD MEAN) Numbers are RAW SCORES.	1-6	30	YES	YES	YES	.30
Stanford Achievement Test:Arithmetic Computation (SAT MATH COMP) Numbers are RAW SCORES.	2-6	33	YES	YES	YES	.30
Stanford Achievement Test:Arithmetic Concepts (SAT MATH CONC) Numbers are RAW SCORES.	1-6	34	YES	YES	YES	.30
Stanford Achievement Test:Science and Social Studies (SAT SCI &SS) Numbers are RAW SCORES.	2,3	36	YES	YES	YES	.30
Stanford Achievement Test:Vocabulary (SAT VCAB) Numbers are RAW SCORES.	1	35	YES	YES	YES	.30
Stanford Achievement Test:Social Studies (SAT SOCL STUD) Numbers are RAW SCORES.	4-6	38	YES	YES	YES	.30
Stanford Achievement Test:Science (SAT SCI) NUMBERS ARE RAW SCORES.	4-6	37	YES	YES	YES	.30
3. PERSONALITY VARIABLES						
California Test of Personality:Self Reliance (CTP SELF RELY) Numbers are SCALED SCORES.	k-6	50	NO	YES	YES	.05
California Test of Personality:Sense of Personal Worth (CTP SELF WRTH) Numbers are SCALED SCORES.	k-6	51	NO	YES	YES	.05
California Test of Personality:Social Skills (CTP SOCL SKIL) Numbers are SCALED SCORES.	k-6	52	NO	YES	YES	.05
California Test of Personality:School Relations (CTP SCHL RLTN) Numbers are SCALED SCORES.	k-6	53	NO	YES	YES	.05

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 3

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
4. PERSONAL HISTORY VARIABLES						
Age (AGE)-(1=5 yrs., 2=6 yrs., 3=7 yrs., 4=8 yrs., 5=9 yrs., 6=10 yrs., 7=11 yrs., 8=12 yrs.)	k-6	1	YES	NO	NO	.10
Family Marital Situation (FMLY MRTL SITN)-(1=Both Parents Present, 2=Divorced, 3=Mother Deceased, 4=Father Deceased, 5=Step-Parent Present)	k-6	6	NO	YES	YES	.30
Family Mobility (FMLY MOBL)-(1=Moved During Previous Year, 2=Moved During Previous 9 Years, 3=Moved During Previous 10+ Years)	k-6	28	NO	YES	YES	.35
Father's Education (DADS EDUC)-(1=0-8 yrs., 2=9-11 yrs., 3=12 yrs., 4=13-15 yrs., 5=16+ yrs.)	k-6	26	NO	YES	YES	.35
Father's Occupation (DADS WORK)-(1=Unemployed, 2=Unskilled Labor, 3=Skilled Labor, 4=Managerial, 5=Professional/Technical)	k-6	24	YES	YES	YES	.35
Health (HLTH)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	7	YES	YES	YES	.30
Hearing (HEARING)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	9	YES	YES	YES	.35
Mother's Education (MOMS EDUC)-(1=0-8 yrs., 2=9-11 yrs., 3=12 yrs., 4=13-15 yrs., 5=16+ yrs.)	k-6	27	NO	YES	YES	.35
Mother's Occupation (MOMS WORK)-(1=Unemployed, 2=Employed)	k-6	25	NO	YES	YES	.35
Race (RACE)-(1=White, 2=Non-White)	k-6	2	YES	YES	YES	.10
Sex (SEX)-(1=Female, 2=Male)	k-6	3	YES	YES	YES	.10

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 3

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Sibling Position (SPOT IN FMLY)-(1=Only Child, 2=Oldest of 2 Children, 3=Youngest of 2 Children, 4=Oldest of 3-5 Children, 5=Middle of 3-5 Children, 6=Youngest of 3-5 Children, 7=Oldest of 6+ Children, 8=Middle of 6+ Children, 9=Youngest of 6+ Children)	k-6	5	NO	YES	YES	.20
Socio-Economic Status (SES):Deutsch Index-(1=Very Low, 2=Low, 3=Middle, 4=Upper-Middle, 5=Upper)	k-6	4	NO	YES	YES	.40
Vision (VI- SION)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	8	YES	YES	YES	.35
5. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS						
Parents Think Continuous Progress Plan Is (PRNT FEEL C.P.)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	20	NO	YES	YES	.35
Parents Think 45-15 Plan Is (PRNT FEEL 4515)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	19	NO	YES	YES	.35
Parents Think Present Program in School Is (PRNT FEEL NOW)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	18	NO	YES	YES	.35
Principal's Perception of Teacher (TCHR TYPE)-(1=Disciplined, 4=Laissez Faire, 7=Permissive)	k-6	56	NO	YES	YES	.50
Student Thinks Continuous Progress Plan Is (KID FEEL C.P.)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	17	NO	YES	YES	.30
Student Thinks 45-15 Plan Is (KID FEEL 4515)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	16	NO	YES	YES	.30
Student Thinks Present Program in School Is (KID FEEL NOW)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	15	NO	YES	YES	.30

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 3

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Teacher Thinks Continuous Progress Plan Is (TCHR FEEL C.P.)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	23	NO	YES	YES	.35
Teacher Thinks 45-15 Plan is (TCHR FEEL 4515)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	22	NO	YES	YES	.35
Teacher Thinks Present Program in School Is (TCHR FEEL NOW)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	21	NO	YES	YES	.35
6. TEACHER EVALUATION OF STUDENTS						
Attendance (ATTN DNCE). Average per cent of time present: (1=<85, 2=85-89, 3=90-94, 4=95-99, 5=>99)	k-6	10	NO	YES	YES	.15
Average Overall Grade (AVER GRDE)-(1=F, 2=D, 3=C, 4=B, 5=A)	2-6	29	YES	YES	YES	.05
Class Participation (INVL IN CLAS)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	13	NO	YES	YES	.30
Classroom Behavior (CON DUCT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	14	NO	YES	YES	.30
Distractability (DIST RACT BLTY) (1=very high, 2=high, 3=moderate, 4=low, 5=very low)	k-6	11	NO	YES	YES	.30
Peer Interaction (PEER INTR ACT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k-6	12	NO	YES	YES	.30
7. SCHOOL DESCRIPTION VARIABLES						
Per Pupil Cost (PER PUPL COST)-(1=Very Low ($575-599), 2=Low ($600-624), 3=Low Average ($625-649), 4=Average ($650-675), 5=High Average ($675-699), 6=High ($700-725)	k-6	54	NO	YES	YES	.25
Pupil Teacher Ratio (PUPL TCHR RTIO)-(1=Low (26-28), 2=Average (29-31), 3=High (33-34), 4=Very High (35+))	k-6	55	NO	YES	YES	.05

FEASIBILITY COMMITTEE REPORT

EXTENDED SCHOOL YEAR

Note: When the School Board of Fair City first expressed an interest in Extended School Year plans, they appointed a Feasibility Committee to study the concept. After many months of deliberation, the committee decided to recommend two plans for the Board's consideration. A summary of their report follows below.

I. INTRODUCTION

A. This committee was created by the School Board to investigate Extended School Year Plans (EXTSY).

1. Rationale for EXTSY

   a. One of the main attractions of EXTSY plans is the financial savings they supposedly bring about through increased building use and significant reductions in capital outlay.

   b. EXTSY plans also have a reputation for bring about increased academic achievement. It does this through shorter vacations (less forgetting between sessions), longer school years for students (not true for all plans), and, increased opportunity for enrichment programs.

2. Previous Research Findings on EXTSY Plans

   a. Previous research indicates that it is essential to have community support for an EXTSY Plan to succeed. This support must come from all elements of the school community, parents, teachers, administrators, and students.

   b. Often the most dramatic gains in achievement appear in schools which previously had histories of below average achievement levels.

   c. Absenteeism decreases with the institution of EXTSY.

   d. The success of a program is greatly dependent upon the siblings in a family (and friends in the neighborhood) being in school and on vacation at the same time.

   e. Student health is not impaired by an EXTSY.

B. Types of EXTSY Plans considered.

1. The Summer School method has not proven to create financial savings.

2. The Multiple Trails approach releases space through time equalization over a longer school year.

3. Student Acceleration Plans reduce enrollment through early graduation. There are two types of plans which do this: the Trimester Plan and the Quadrimester Plan.

4. The Term Rotation approach includes both mandatory pupil participation patterns and freedom of pupil choice plans.

C. The Committee recommendations.

1. The Committee decided to choose plans included under the last category.

2. Within this category the Committee decided that the 45-15 Cycling Plan and the Continuous Progress Cycling Plan were the programs which should get further study.

II. THE 45-15 PLAN

A. Description

1. The pupils have the traditional 180-day school year, but the school buildings are utilized year round.

2. The pupils are divided up into four groups on a geographical basis, but only three groups attend school at any one time.

3. The four groups stay in the same order of rotation.

4. The pupils attend school for a 45-day (approximately nine weeks) learning session followed by a 15-day (approximately three weeks) vacation.

5. All students have traditional holidays simultaneously.

B. Schedule (Sample attached)

C. Costs

1. It is estimated that the combined cost for salaries, plant operation, and other operational costs would be 4% higher than the yearly operational budget for the traditional schedule on a per student basis.

2. In addition, it is estimated that a 1.5% increase in per student cost would be experienced the first year due to start-up costs.

3. Savings due to smaller capital outlay for new elementary school buildings and equipment is estimated to be 6.5 million over the first five years alone.

III. THE CONTINUOUS PROGRESS PLAN

A. Description

1. Students attend classes for 196-200 days per year and the buildings are utilized year round rather than the traditional 180 days.

2. The pupils are divided into five groups on a geographical basis, only four of which attend school at any one time.

3. The pupils attend classes for five-to-nine week cycles throughout the year with two week vacations between cycles.

4. The five groups always stay in the same order of rotation.

5. All students have traditional holidays simultaneously.

B. Schedule (Sample attached)

C. Cost

1. It is estimated that the combined cost for salaries, plant operation, and other operational costs would be 7% higher than the yearly operational budget for the traditional schedule on a per student basis.

2. In addition, it is estimated that a 1.5% increase in per student cost would be experienced the first year due to start-up costs.

3. Savings due to smaller capital outlay for new elementary school buildings and equipment is estimated to be 7.12 million over the first five years alone.

IV. COMMITTEE EVALUATION OF THE PLANS

A. 45-15 Cycling Plan

1. Advantages:

   a. This plan is recommended by the New York State Department of Education for "immediate dollar savings plus educational values."

   b. This plan represents a balance between improvement of educational quality and economic efficiency.

   c. Generally, siblings and neighborhood friends go to school and have vacations at the same time.

   d. This plan has a history of fairly good acceptance by the community at large.

   e. 25%-30% of current classroom capacity can be released to accommodate additional enrollment which drastically reduces the need for additional capital outlay.

   f. The shorter vacations (three weeks) allow for less "forgetting" between sessions.

   g. Teachers can choose the length of their working year.

   h. Facilities can be used more efficiently.

   i. This plan is recommended for non-disadvantaged students.

2. Disadvantages:

   a. The School Year is not actually extended for individual students.

   b. Parents may object to curtailing their family vacations to three consecutive weeks.

   c. Depersonalization may be encouraged because teachers only know a student for three weeks.

d. Fatigue can become a factor in teacher effectiveness.

B. Continuous Progress Cycling Plan

1. Advantages:

a. This plan is recommended by the New York State Department of Education for "immediate dollar savings plus educational values."

b. With this plan the school year is truly expanded for individual students.

c. Generally, siblings and neighborhood friends go to school and have vacations at the same time.

d. 20% savings in classroom space is realized, allowing for increased enrollment and reduced capital outlay.

e. The plan's shorter vacations (two weeks) allow for less "forgetting" between sessions.

f. Facilities can be used more efficiently.

g. This plan allows class size to be reduced.

h. This plan is recommended especially for schools enrolling many disadvantaged children because of the extra learning time provided and more attention possible.

2. Disadvantages:

a. Parents may object to curtailing their family vacations to two consecutive weeks.

b. Depersonalization may be encouraged because teachers only have a student in their classroom for eight or nine weeks.

c. Fatique may be a factor in teacher effectiveness.

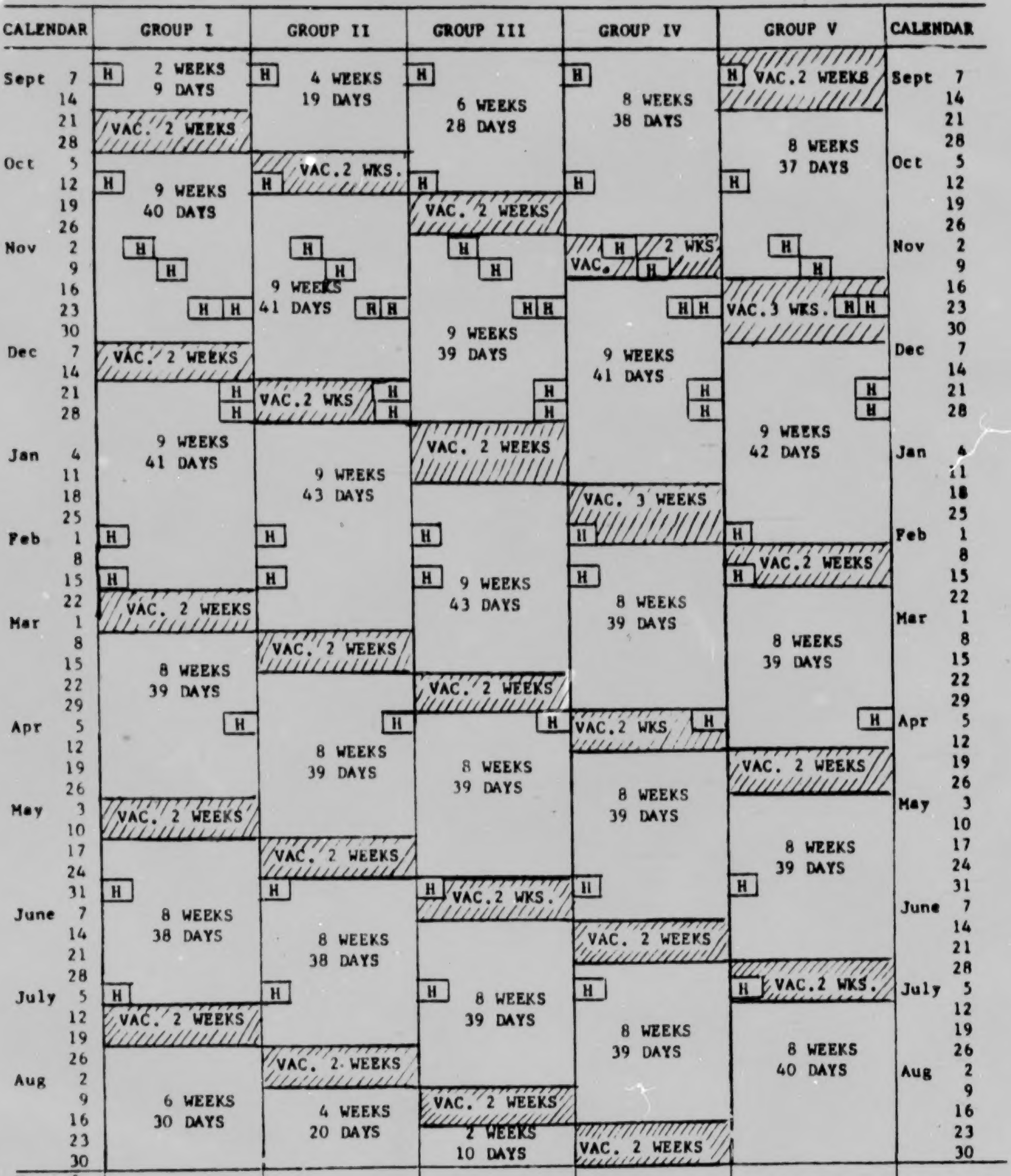
V. SUGGESTED PROCEDURE

A. An experiment using both plans should be conducted.

B. Survey schools in district to ascertain appropriate sites for experiment, considering race, SES, achievement (student), attitude (parent, student, teacher), and cost.

C. A recommendation of one plan should be made for the entire school system if the results indicate taking such action.

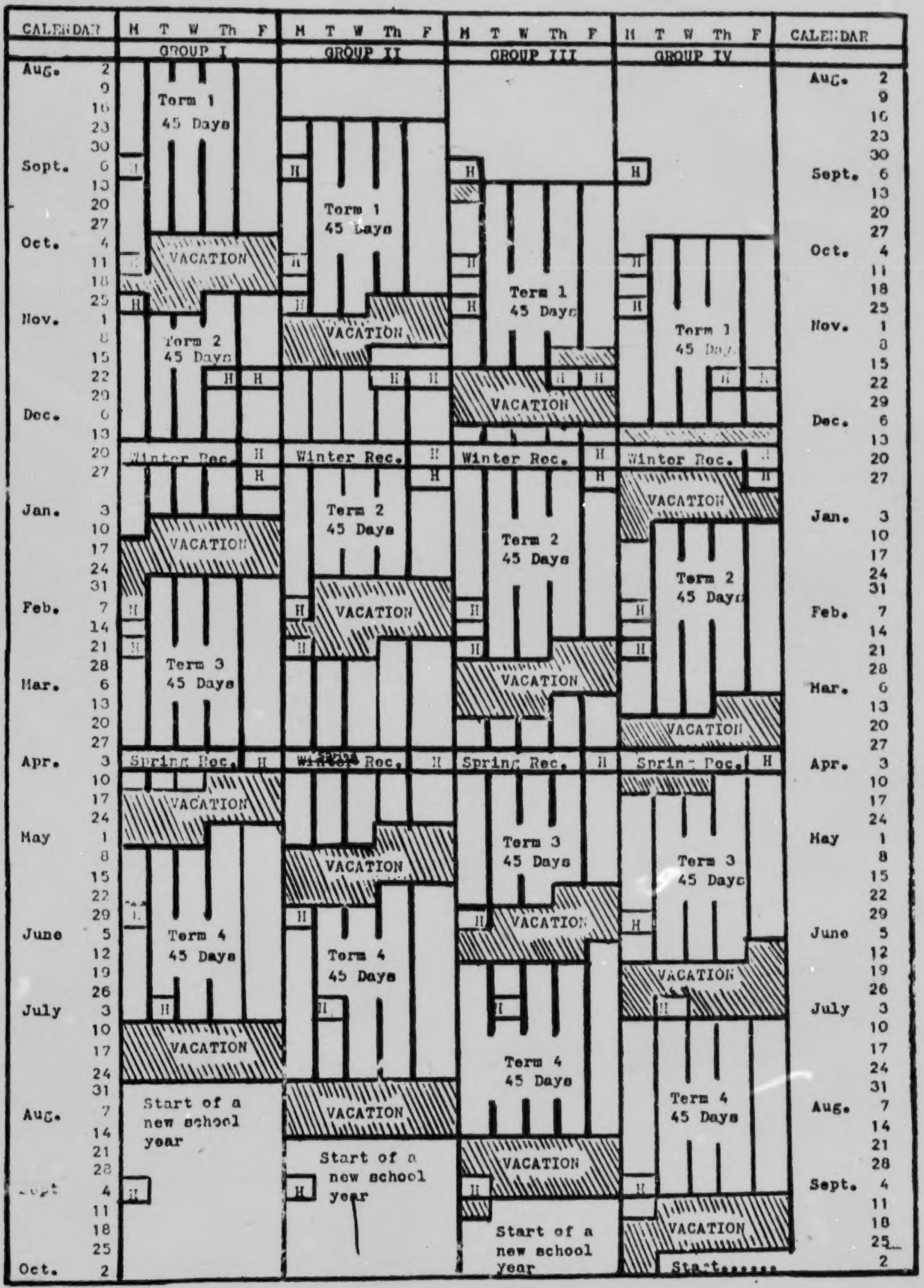
STUDENT VACATION PATTERNS IN THE CONTINUOUS LEARNING PROGRAM
THE EIGHT TO NINE WEEK CYCLE


CALENDAR
GROUP I
GROUP II
GROUP III
GROUP IV
GROUP V
CALENDAR
Sept 7 14 21 28
Oct 5 12 19 26
Nov 2 9 16 23 30
Dec 7 14 21 28
Jan 4 11 18 25
Feb 1 8 15 22
Mar 1 8 15 22 29
Apr 5 12 19 26
May 3 10 17 24 31
June 7 14 21 28
July 5 12 19 26
Aug 2 9 16 23 30
H
2 WEEKS 9 DAYS
VAC. 2 WEEKS
9 WEEKS 40 DAYS
VAC. 2 WEEKS
9 WEEKS 41 DAYS
VAC. 2 WEEKS
8 WEEKS 39 DAYS
VAC. 2 WEEKS
8 WEEKS 38 DAYS
VAC. 2 WEEKS
6 WEEKS 30 DAYS
4 WEEKS 19 DAYS
VAC.2 WKS.
9 WEEKS 41 DAYS
VAC.2 WKS
9 WEEKS 43 DAYS
VAC. 2 WEEKS
8 WEEKS 39 DAYS
VAC. 2 WEEKS
8 WEEKS 38 DAYS
VAC. 2 WEEKS
4 WEEKS 20 DAYS
6 WEEKS 28 DAYS
VAC. 2 WEEKS
9 WEEKS 39 DAYS
VAC. 2 WEEKS
9 WEEKS 43 DAYS
VAC. 2 WEEKS
8 WEEKS 39 DAYS
VAC.2 WKS.
8 WEEKS 39 DAYS
VAC. 2 WEEKS
2 WEEKS 10 DAYS
8 WEEKS 38 DAYS
VAC. 2 WKS
9 WEEKS 41 DAYS
VAC. 3 WEEKS
8 WEEKS 39 DAYS
VAC.2 WKS
8 WEEKS 39 DAYS
VAC. 2 WEEKS
8 WEEKS 39 DAYS
VAC. 2 WEEKS
VAC.2 WEEKS
8 WEEKS 37 DAYS
VAC.3 WKS.
9 WEEKS 42 DAYS
VAC.2 WEEKS
8 WEEKS 39 DAYS
VAC. 2 WEEKS
8 WEEKS 39 DAYS
VAC.2 WKS.
8 WEEKS 40 DAYS

	GROUP I	GROUP II	GROUP III	GROUP IV	GROUP V
No. of School Days	197	200	198	196	197
No. of Vac. Days	63	60	62	64	63

H = Holidays

RESCHEDULING THE SCHOOL YEAR THROUGH TERM ROTATION
THE FORTY FIVE/FIFTEEN PLAN


CALENDAR
M T W Th F
GROUP I
GROUP II
GROUP III
GROUP IV
Aug. 2 9 16 23 30
Sept. 6 13 20 27
Oct. 4 11 18 25
Nov. 1 8 15 22 29
Dec. 6 13 20 27
Jan. 3 10 17 24 31
Feb. 7 14 21 28
Mar. 6 13 20 27
Apr. 3 10 17 24
May 1 8 15 22 29
June 5 12 19 26
July 3 10 17 24 31
Aug. 7 14 21 28
Sept. 4 11 18 25
Oct. 2
Term 1 45 Days
Term 2 45 Days
Term 3 45 Days
Term 4 45 Days
VACATION
Winter Rec.
Spring Rec.
H
Start of a new school year
Start......

H = Holidays

FEHR - PRACTICUM

Request For Proposals

For

EARLY CHILDHOOD EDUCATION (HEADSTART)
RFP004

©

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U.S. OFFICE OF EDUCATION
PROJECT NO. 0-9047
CONTRACT NO'S. OEC-0-70-4773(520)
OEG-0-72--529

LEVERNE S. COLLET
4215A SCHOOL OF EDUCATION BUILDING
UNIVERSITY OF MICHIGAN

FEHR-PRACTICUM REQUEST FOR PROPOSALS (RFP)
RFP004:HEADSTART

The Fair City Board of Education is soliciting proposals to evaluate three programs intended to provide compensatory education to pre-school children from deprived environments. Specific details of the content to be investigated are given in the attached problem description and its various appendices.

In general, projects will be funded in two separate phases. In phase I, a team is awarded a planning grant which will enable them to explore the extent and severity of the problem and to develop a proposal for an experimental study of the effects of the two available remedial programs as compared to present classroom practice. When an adequate proposal has been developed, the team will then be funded for phase II, in which they actually carry out the proposed research. A detailed description of the specific form and contents of the request for a planning grant and the research proposal are given in the Players' Instructions. In either case, the level of funding is subject to negotiation with the game manager.

A detailed description of the tasks involved in each phase of the project is provided in the INSTRUCTIONS section of the FEHR-PRACTICUM Players' Handbook. However, the time available and the needs of the players involved in a particular game vary from location to location. For that reason, the projects which may be funded under this RFP will vary widely in their scope, complexity, and degree of sophistication. The level of complexity expected from your team for this particular problem is specified in the itemized list of the work to be accomplished which appears later in this document.

The remainder of this RFP document is organized into three sections. The first section, entitled Problem Description, provides an overview of the problem, and describes the particular treatments (programs), research subjects, and variables which may be used in your study. In addition, it provides specific references to various sources of additional information. The second section provides a detailed list of the tasks to be performed by your team. The third section is a set of appendices providing detailed data on the various components described in section I. A table of contents appears at the beginning of this section.

PROBLEM DESCRIPTION

The Problem: In Fair City, like many other American cities, there is a growing awareness of the substantial number of children who enter first grade ill equipped to perform at normal levels. The Board of Education has decided that an effective way to meet this problem is to institute a Headstart project.

Headstart was developed by the U.S. government to help meet the needs of culturally disadvantaged pre-school children by providing them with experiences which appear to be prerequisite to school success. According to government guidelines, children qualify for this program if they score "low" on both intelligence and on a cultural-deprivation scale. It has been found that such children consistently do poorly in school.

The Board of Education is fortunate to have the Utopia State University close by. This university's School of Education has developed three Headstart curriculum programs and has a number of teachers trained in their administration. The School of Education said they would be very willing to have their programs tested and would make their trained teachers available. The proposed study would provide the Board of Education with evidence as to which of these three curriculums would be most effective for Fair City children.

The Research Population: The research population available in this problem includes all three year old children in Fair City. However, only children who meet government guidelines (see Appendix IV) may be included in a Headstart program. In Appendix II, children are listed according to the elementary school they will attend for first grade.

Available Variables: In this problem there are 78 variables. These include organismic variables such as age, health,...etc., intelligence tests, achievement tests, and various perceptual tests are also available. See Appendix IV for a complete listing.

Available Treatments: The three treatments or curriculums developed by the Utopia State University's School of Education are: the Cognitive Curriculum, the Language Curriculum, and the Unit Based Curriculum. These curriculums represent a variety of approaches aimed at achieving the goals of Headstart. The optimum size class for these treatments is between 15 and 20 children. For more complete descriptions of these treatments see Appendix III. In addition, it is possible to administer a present practice treatment to children, in this case, the children would stay home, which allows the researcher to examine what happens to children overtime who do not experience one of these Headstart curriculums.

It is also possible to administer a treatment which will give a child the experience of first grade in his regular school after he has gone through one of the other treatments. A note of caution, children who experienced the same curriculum or were in the same present practice group will not get the same first grade treatment if they come from different school districts. Consequently, the logistics, in terms of administering treatments and in terms of evaluation, can become very complicated because you have children scattered all over the city. See Appendix V.

Previous Research: Reports of previous research are available in the Information Bank. See Appendix I for a list of titles.

CHECKLIST OF TASKS TO BE PERFORMED

Since the work to be accomplished under this RFP varies from location to location, your Game Manager has placed a ( ) before the particular items for which your team is responsible in the PRACTICUM. (If no items are checked, see your Game Manager before proceeding.) A detailed explanation of how to accomplish each task appears in the Instructions section on the page indicated at right. Tasks marked with an asterisk (*) are mandatory in every PRACTICUM. Before beginning, each player should study, interrelate, and synthesize the information contained in the RFP, its various appendices, and the relevant parts of the Fair City Booklet.

Assigned Tasks	Description of Task	Instructions Page
* (1)	Each player should submit an Orientation Questionnaire to the Game Manager. The specific question to be answered are in the INSTRUCTIONS.	1
* (2)	Form teams as directed by the Game Manager. The following assignments and requirements apply throughout this PRACTICUM: Team salary: $_____ per day. Costs are to be paid as indicated below: ___(a) ignore all costs ___(b) pay costs by check ___(c) pay costs with computer receipts Requests for file searches, survey and treatments should be: ___(a) entered by the team via PROMPTS ___(b) entered by the team via punch cards ___(c) written on the appropriate form and submitted to the Game Manager A Log of research activities: ___(a) to be kept by each player ___(b) to be kept by each team ___(c) no long necessary	1
* (3)	Operationalize the problem observing the following restrictions: Literature: ___no review necessary ___Information Bank only ___Information Bank and regular library Definition: ___Problem definition provided by Game Manager ___complete problem definition form	3-5

Assigned Tasks		Description of Task	Instructions Page
_____	(4)	Determining Extent and Severity of the Problem ___4.1 Submit a Request for a Planning Grant on the form provided Due Date:______________________ Maximum Grant $_________________ ___4.2 Run File Search and/or Survey Maximum sample size:___________ Maximum number of variables____ (___independent; ___dependent) ___4.3 Analyze the data from 4.2 using appropriate statistical procedures ___4.4 Formal Problem Description (first draft). To be presented for critiquing by the other teams on (date)_______________________	5-7
_____	(5)	Funds are available for identifying a Pool of Research Subjects for Treatments ___Yes; ___No	7
_____	(6)	Empirical Evaluation of the Education Treatments ___6.1 Submit a Research Proposal to the Game Manager. The proposal must meet these restrictions and requirements: Maximum number of variables per observation: Dependent_____; Independent_____; Total_____ Maximum number of observation times_____ Maximum number of research subjects _____ Date proposal must be submitted_____ The maximum project budget is: $_____ The proposal should contain each item checked below: ___(a) abstract of the proposal ___(b) introduction and overview of problem	7-9

Assigned Tasks	Description of Task	Instructions Page

___(c) a review of the related literature from:
    ___the Information Bank only
    ___both the Information Bank and library
___(d) a formal statement of the problem
___(e) a description of the procedures to be used
___(f) a schedule of activities
___(g) an itemized budget

The writing style for the proposal is checked below:

___(a) brief outline
___(b) detailed outline
___(c) formal narrative

___6.2 Using an appropriate method, divide your sample into treatment groups, observing the restrictions given in Task 3. Run the experiment on the FEHR Data Generator. Data will be output on:

___(a) printed copy only
___(b) printed copy and punch cards
___(c) printed copy and the team's computer file

___6.3 Analyze and interpret the data from Step 6.2 using appropriate statistical procedures. Record restrictions (to be announced by the Game Manager) below:

____

____

___6.4 Submit a final report to the Game Manager. The report should contain the proposal items checked in 6.1 plus the items checked below:

___(h) the results of the field test
___(i) a summary of the statistical findings
___(j) a discussion of results culminating in an educational decision
___(k) a discussion of the limitations of the project

Assigned Tasks	Description of Task	Instructions Page
	___(l) recommendations for future research ___(m) an appendix containing the log(s) of activities The writing style of the final report should be: ___(a) brief outline ___(b) detailed outline ___(c) formal narrative Final report due date:____________	
_____ (7)	Attend a Consolidation Session (at a time to be announced by the Game Manager) to discuss the strengths and weaknesses of the strategies employed by your team, and any other teams which are attacking the same problem	9

APPENDICES

TABLE OF CONTENTS

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APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 5
RIGHT TO READ

1. References Directly Related To This Problem.

Center for Research on Learning and Language Behavior, Strategies in Language Research. Working paper for the Molar Groups; High Level Language Structure and Behavioral Engineering.

Dehirsch, Katrina; Jansky, Jeannette Jefferson; and Langford, William S. *Predicting Reading Failure, A Preliminary Study of Reading, Writing and Spelling Disabilities in Pre-School Children.* Harper & Row Publishers, New York, 1956, 144 pp.

Fishback, T.J. "Study of Relationships of Reading Mastery Level to General Reading Achievement to Validate Diagnostic Reading Tests." AERA, New York, February 4-7, 1971.

Harckham, Laura D., Gunning, A.F. And Waldron, C. "Multiple Prediction of Reading Achievement in Grades One Through Four Using Kindergarten Measures." AERA, New York, February 4, 1971.

Lichtman, Marilyn, "Keys to a Successful Reading Program." Unpublished Paper.

Minutes of the Workshop in Remedial Reading. January 13, 14, 1961.

Stoodt, Barbara, "The Relationship Between Understanding Grammatical Conjunctions and Reading Comprehension." AERA, New York, 1971.

2. Auxiliary References.

Bryan, Quentin, R. (Unified School District, Inglewood, California). "Relative Importance of Intelligence and Visual Perception in Predicting Reading Achievement." *California Journal of Educational Research,* 1964, 15(1), 44-48.

Elementary School Information - Fair City.

Falik, L.H. "The Effects of Special Perceptual-Motor Training in Kindergarten on Reading Readiness and on Second Reading Grade Performance." *Journal of Learning Disabilities,* 1969, 2(8), 395-402.

Kagan, Jerome and Moss, H.A. "Parental Correlates of Child's I.Q. And Height: A Cross-Validation of the Berkeley Growth Study Results." *Child Development,* 1959, 30, 325-332.

Laurent, James A. Do Pupil Race and/or School Racial Balance Affect Academic Performance? Bulletin; December, 1970. (ERIC)

McNinch, George. "Predictive Values of Selected Auditory Perceptual Factors in Relation to Measured First Grade Reading Achievement." University of Southern Mississippi Reading Center, Unpublished Paper.

APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 5
RIGHT TO READ

Norman, R.D. And Daley, M.F. "The Comparative Personality Adjustment of Superior and Inferior Readers." Journal of Educational Psychology, 1959, 50(1), 31-6.

O'Donnell, P.A. And Eisenson, J. "Delacato Training for Reading Achievement and Visual-Motor Integration." Journal of Learning Disabilities, 1960, 2(a), 441-447.

Plack, J.J. "Relationship Between Achievement in Reading and Achievement in Selected Motor Skills in Elementary School Children." American Association of Health, Physical Education and Recreation Research Quarterly, 1968, 39(4), 1063-1068.

Robinson, H.M. "Visual Screening Tests for Schools." Elementary School Journal, 1953, 54, 217-222.

St. John, Nancy. "Thirty-Six Teachers: Their Characteristics and Outcomes for Black and White Pupils." American Educational Research Journal, 1971, 8(4), 635-648.

"Study of Achievement in Reading of Pupils Transferred from Schools 15 and 37 to Peripheral Schools to Eliminate Overcrowding, to Abandon an Obsolete School, and to Achieve a More Desirable Racial Balance in City Schools." Buffalo Public Schools, New York, March 1967. (ERIC)

3. Descriptive and Normative Information About Variables (Tests).

California Test of Mental Maturity (Short Form).

California Test of Personality.

Deutsch Socio-Economic Status Index

Gates-MacGinitie Reading Tests.

Gates-MacGinitie Readiness Skills Test

Gates Reading Tests.

Lorge-Thorndike Intelligence Scale.

Metropolitan Readiness Tests.

Nelson Silent Reading Test.

Otis-Lennon Mental Ability Test.

Stanford Achievement Tests.

Wechsler Intelligence Scale for Children.

Wepman Auditory Discrimination Test.

4. Test Critiques, Validation Studies, etc.

APPENDIX I

CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 5

RIGHT TO READ

Anderson, H.B. And Leton, D.A. "Factor Analysis of the California Test of Mental Maturity." Education and Psychological Measurement, 1964, 24(3), 513-523.

Anderson, W.F. "Relation of Lorge-Thorndike Intelligence Test Scores of Public School Pupils to the Socio-Economic Status of Their Parents." Journal of Experimental Education, 1962, 31(1).

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Burns, K. "Pattern of WISC Scores for Children of Two Socio-Economic Classes and Races." Child Development, 1970, 41, 493-499.

Eagle, N. And Harris, A.S. "Interaction of Race and Test on Reading Performance Scores." Journal of Educational Measurement, 1966, 6(3), 131-135.

Feldman, S. And Weiner, M. "The Use of a Standardized Reading Achievement Test with Two Levels of Socio-Economic Status Pupils." The Journal of Experimental Education, 1964, 32(3), 269-274.

Fortenburry, W.D. And Broome, B.J. "Comparison of the Gates Reading Survey and the Reading Section of the Wide-Range Achievement Test." Journal of Developmental Reading, 1963, 7(3), 66-68.

Grotelveschen, A. "Otis-Lennon Mental Ability Test." Journal of Educational Measurement, 1969, 6(2), 111-113.

Johnson, G.B. "Factors to be Considered in the Interpretation of Intelligence Test Scores." The Elementary School Journal, 1953, 1-8.

Knief, L.M. And Stroud, I.B. "Intercorrelations Among Various Intelligence, Achievement, and Social Class Scores." Journal of Educational Psychology, 1959, 50(3), 117-120.

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APPENDIX I

CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 5

RIGHT TO READ

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Reid, W.R. And Schoer, L.A. "Reading Achievement, Social Class and Subtest Pattern on the WISC." The Journal of Educational Research, 1966, 59(10), 469-472.

Silberberg, N. And Feldt, L.S. "Intellectual and Perceptual Correlates of Reading Disabilities." Journal of School Psychology, 1968, 6(4), 237-245.

Silverstein, A.B. "Reappraisal of the Validity of WAIS, WISC, and WPPSI Short Forms." Journal of Consulting and Clinical Psychology, 1970, 34(1), 12-14.

Smith, A.E. "Otis-Lennon Mental Ability Test." Journal of Counseling Psychology, 1970, 17(1), 91-92.

Stake, R.E. And Hastings, I.T. "The Stanford Achievement Test Battery." Personnel and Guidance Journal, 1964, 43(10), 178-184.

RESEARCH POPULATION: APPENDIX II

The research population consists of all the three year olds in Fair City. They are listed according to the elementary school they would attend if they were of age. Each of these students has an ID consisting of three sections. The first two digits from the left indicate Fair City and therefore is always the same. The second two digits identify the school and the third or last three digits identify the student. For example, 01-12-091 identifies child number 91 from H.D. Diddle Elementary School in Fair City. The hyphens are for clarity only. When entering these ID numbers into the computer, one would eliminate the hyphens and type 0112091. If you want to measure all the students from a particular school all you have to do is enter zeroes in the spot for the individual student digits. For example, 0112000 would provide the variable scores for all the three year olds identified with the H.D. Diddle Elementary School. This is entered into the computer as one ID. So when you enter this ID in the computer it represents one of the ID's allotted to a line but you receive the results for all 91 children. There are 1822 separate ID's in this problem. They are listed below.

SCHOOL	UNIT INDEX	SUB-UNIT INDEX	NUMBER OF SUBJECTS	STUDENT ID'S AVAILABLE
L.J. Horner	01	01	57	01-01-001 to 01-01-057
P.P. Pumpkin-eater	01	02	116	01-02-001 to 01-02-116
Knave of Hearts	01	03	90	01-03-001 to 01-03-090
Jack & Jill	01	04	116	01-04-001 to 01-04-116
.D. Dock	01	05	94	01-05-001 to 01-05-094
M. Goose	01	06	96	01-06-001 to 01-06-096
Lamb	01	07	102	01-07-001 to 01-07-102
L.M. Muffet	01	08	73	01-08-001 to 01-08-073
J. Sprat	01	09	70	01-09-001 to 01-09-070
Calicocat	01	10	111	01-10-001 to 01-10-111
T. Blindmice	01	11	94	01-11-001 to 01-11-094
H.D. Diddle	01	12	91	01-12-001 to 01-12-091
O.K. Cole	01	13	110	01-13-001 to 01-13-110
Shaftoe	01	14	115	01-14-001 to 01-14-115
M.M. Contrary	01	15	50	01-15-001 to 01-15-050
Inashoe	01	16	95	01-16-001 to 01-16-095
S. Simon	01	17	90	01-17-001 to 01-17-090
Hubbard	01	18	81	01-18-001 to 01-18-081
Sixpence	01	19	67	01-19-001 to 01-19-067
B.B.B. Sheep	01	20	69	01-20-001 to 01-20-069
L.B. Blue	01	21	35	01-21-001 to 01-21-035

APPENDIX III

CATALOG OF TREATMENTS

In this problem there are 7 treatments. There are two groups for each of the three curriculum treatments and one present practice treatment group. Each of these Headstart treatments operates for two years. The third year of the problem consists of each child returning to his regular school district no matter what Headstart program he may have been in. The treatments are listed below along with their costs.

TREATMENT INDEX	NAME OF TREATMENT	TREATMENT DESCRIPTION	FIXED OVERHEAD COST FOR SETTING UP PROGRAM	FIXED COST PER STUDENT ENTERING PROGRAM	YEARLY COST FOR MAINTAINING THE PROGRAM	YEARLY COST FOR MAINTAINING EACH PUPIL IN PROGRAM
1	Cog. Cur. Group 1 Teachers	Based on J. Piaget's principles of cognitive development	$75.00	$50.00	$100.00	$2000.00
2	Cog. Cur. Group 2 Teachers	Based on Piaget's principles of cognitive development	$75.00	$50.00	$100.00	$2000.00
3	Lang. Cur. Group 3 Teachers	High intensity task orientated verbal activities developed by Bereiter & Englemann	$75.00	$50.00	$100.00	$2000.00
4	Lang. Cur. Group 4 Teachers	High intensity task orientated verbal activities developed by Bereiter & Englemann	$75.00	$50.00	$100.00	$2000.00
5	Unit Based Curriculum Group 5 Teachers	Patterned after traditional nursery school program	$75.00	$50.00	$100.00	$2000.00
6	Unit Based Curriculum Group 6 Teachers	Patterned after traditional nursery school program	$75.00	$50.00	$100.00	$2000.00
7	Present Practice	Children stay at home	$100.00	$50.00	$100.00	$.50

Treatment Times: The time units in this problem are years. Time 00 represents the first day of classes of this field study, September 8; time 01 represents the end of the first year for the first seven treatments listed; time 02 represents the end of the second year for the first seven treatments (this is equivalent to the end of kindergarten and the beginning of first grade). Time 03 represents the end of first grade, if you choose to extend the study that long by administering the first grade treatments. It is not necessary to run the first seven treatments for two years; it is possible to run them for one year and stop, or run one of them for a year and then another for a year. It is not possible to run a first grade treatment unless the subjects have experienced at least two years of the first seven treatments. Only then would the subject be old enough to attend first grade.

Observation Times or Testing Times: Tests may be administered and variables measured during a treatment at times 00, 01, 02, 03, inclusive. Illustrated in the chart below is a presentation of time sequences in this problem. It may be wise to consider this chart when making variable selections, for it may happen that a variable available at time 00 will not, for example, be available at time 02, or vice versa.

	Time 00	Time 01	Time 02	Time 03
Three year old	First day of Headstart.	End of the first year.	End of second year of Headstart. End of kindergarten.	End of first grade.

Note 1: The costs listed above do not include the $50 per/person charge of observing the subjects in their respective first grades they attend.

Note 2: The costs listed above do not include per/person test costs, although these costs will be included in the assessed charge when tests are given during treatment. (See Catalog of Variables for these costs.) There are no overhead costs for administering tests during treatments.

CATALOG OF VARIABLES: APPENDIX IV

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Note 1: The category GRADE AVAILABLE indicates at which grade level the test can be administered.

Note 2: The category AVAILABLE ON: FILE SURV TREAT identifies the process by which individual variables can be retrieved. That is, if there is a "YES" under FILE, the variable can be retrieved via a File Search. If there is a "YES" under SURV, the variable can be measured via a Survey. If there is a "YES" under TREAT, the variable can be measured during a treatment.

Note 3: The category PRICE/PERSON indicates costs of variable scores measured via survey and during treatment ONLY. If the variable is retrieved via File Search, the cost/variable/person is ALWAYS 5¢.

Note 4: Assume that all survey data is collected at time 00, which is the first day of classes. Likewise, all data collected at time 00 during a treatment is the first day of classes.

Note 5: There are no file searches in this problem.

COSTS THAT MAY BE INCURRED DURING HEADSTART

Survey

1.	Fixed overhead charge for initiating a survey	$100.00
2.	Overhead costs of entering units	$ 00.00
3.	Overhead costs of administering tests to sub-units	$ .50
4.	Cost of variable scores	See Catalog of Variables

Secretary

1.	Fixed overhead costs for initiating use of secretary	$ 10.00
2.	Cost of secretary per student	$ 0.10

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 4

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
1. ABILITY AND INTELLIGENCE VARIABLES						
California Test of Mental Maturity:Verbal I.Q. (CTMM VRBL IQ) Numbers are SCALED SCORES.	p-1	18	NO	YES	YES	.20
California Test of Mental Maturity:Non-Verbal I.Q. (CTMM NON- VRBL) Numbers are SCALED SCORES.	p-1	19	NO	YES	YES	.20
Columbia Mental Maturity Scale (CMMS IQ) Numbers are SCALED SCORES.	p-1	22	NO	YES	YES	3.00
Leiter International Performance Scale (LIPS) Numbers are SCALED SCORES.	p-1	20	NO	YES	YES	7.75
Peabody Picture Vocabulary Test (PPVT) Numbers are SCALED SCORES.	p-1	21	NO	YES	YES	2.25
Raven Progressive Matrices (RAVN PROG MATR) Numbers are SCALED SCORES.	p-1	23	NO	YES	YES	5.00
Stanford-Binet (S-B) Numbers are SCALED SCORES.	p-1	17	NO	YES	YES	12.65
2. ACHIEVEMENT VARIABLES						
Metropolitan Achievement Tests:Reading (MAT READ) Numbers are RAW SCORES.	1	32	NO	NO	YES	.20
Metropolitan Achievement Tests:Word Knowledge (MAT WORD KNOW) Numbers are RAW SCORES.	1	30	NO	NO	YES	.20
Metropolitan Achievement Tests:Concepts and Skills (MAT MATH C&S) Numbers are RAW SCORES.	1	33	NO	NO	YES	.20
Metropolitan Achievement Tests:Word Discrimination (MAT WORD DISC) Numbers are RAW SCORES.	1	31	NO	NO	YES	.20
Stanford Achievement Test:Paragraph Meaning (SAT PARA MEAN) Numbers are RAW SCORES.	1	24	NO	NO	YES	.30

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 4

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Stanford Achievement Test:Spelling (SAT SPEL) Numbers are RAW SCORES.	1	25	NO	NO	YES	.30
Stanford Achievement Test:Word Meaning (SAT WORD MEAN) Numbers are RAW SCORES.	1	26	NO	NO	YES	.30
Stanford Achievement Test:Word Study Skills (SAT WORD STDY) Numbers are RAW SCORES.	1	27	NO	NO	YES	.30
Stanford Achievement Test:Arithmetic (SAT MATH) Numbers are RAW SCORES.	1	28	NO	NO	YES	.30
Stanford Achievement Test:Vocabulary (SAT VCAB) Numbers are RAW SCORES.	1	29	NO	NO	YES	.30
B. READING ACHIEVEMENT AND READINESS VARIABLES						
Metropolitan Readiness Test:Word Meaning (MTRO REDI WORD) Numbers are RAW SCORES.	1	34	NO	NO	YES	.10
Metropolitan Readiness Test:Information (MTRO REDI INFO) Numbers are RAW SCORES.	1	35	NO	NO	YES	.10
Metropolitan Readiness Test:Numbers (MTRO REDI NMBR) Numbers are RAW SCORES.	1	36	NO	NO	YES	.10
Metropolitan Readiness Test:Sentences (MTRO REDI SENT) Numbers are RAW SCORES.	1	37	NO	NO	YES	.10
Metropolitan Readiness Test:Matching (MTRO REDI MTCH) Numbers are RAW SCORES.	1	38	NO	NO	YES	.10
Metropolitan Readiness Test:Copying (MTRO REDI COPY) Numbers are RAW SCORES.	1	39	NO	NO	YES	.10

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 4

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
4. PSYCHOLINGUISTIC VARIABLES						
Illinois Test of Psycholinguistic Abilities:Auditory Decoding (ITPA AUD DCOD) Numbers are RAW SCORES.	p	40	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Vocal Association (ITPA AUDV ASSN) Numbers are RAW SCORES.	p	41	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Vocal Automatic (ITPA AUDV AUTO) Numbers are RAW SCORES.	p	42	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Vocal Sequencing (ITPA AUDV SQNC) Numbers are RAW SCORES.	p	43	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Vocal Encoding (ITPA VOCL ENCD) Numbers are RAW SCORES.	p	44	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Decoding (ITPA VISL DCOD) Numbers are RAW SCORES.	p	45	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Motor Association (ITPA VISM ASSN) Numbers are RAW SCORES.	p	46	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Motor Sequencing (ITPA VISM SQNC) Numbers are RAW SCORES.	p	47	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Motor Encoding (ITPA MOTR ENCD) Numbers are RAW SCORES.	p	48	NO	YES	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Decoding (ITPA KAUD DCOD) Numbers are RAW SCORES.	k	49	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Vocal Association (ITPA KAUD ASSN) Numbers are RAW SCORES.	k	50	NO	NO	YES	1.00

APPE[illegible]X IV
CATALOG OF VARIABLES FOR PROBLEM 4

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Illinois Test of Psycholinguistic Abilities:Auditory Vocal Automatic (ITPA KAUD AUTO) Numbers are RAW SCORES.	k	51	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Vocal Sequencing (ITPA KAUD SQNC) Numbers are RAW SCORES.	k	52	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Vocal Encoding (ITPA KVOC ENCD) Numbers are RAW SCORES.	k	53	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Decoding (ITPA KVIS DCOD) Numbers are RAW SCORES.	k	54	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Motor Association (ITPA KVIS ASSN) Numbers are RAW SCORES.	k	55	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Motor Sequencing (ITPA KVIS SQNC) Numbers are RAW SCORES.	k	56	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Motor Encoding (ITPA KMOT ENCD) Numbers are RAW SCORES.	k	57	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Decoding (ITPA 1AUD DCOD) Numbers are RAW SCORES.	1	58	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Vocal Association (ITPA 1AUD ASSN) Numbers are RAW SCORES.	1	59	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Vocal Automatic (ITPA 1AUD AUTO) Numbers are RAW SCORES.	1	60	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Auditory Vocal Sequencing (ITPA 1AUD SQNC) Numbers are RAW SCORES.	1	61	NO	NO	YES	1.00

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 4

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Illinois Test of Psycholinguistic Abilities:Vocal Encoding (ITPA 1VOC ENCD) Numbers are RAW SCORES.	1	62	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Decoding (ITPA 1VIS DCOD) Numbers are RAW SCORES.	1	63	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Motor Association (ITPA 1VIS ASSN) Numbers are RAW SCORES.	1	64	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Visual Motor Sequencing (ITPA 1VIS SQNC) Numbers are RAW SCORES.	1	65	NO	NO	YES	1.00
Illinois Test of Psycholinguistic Abilities:Motor Encoding (ITPA 1MOT ENCD) Numbers are RAW SCORES.	1	66	NO	NO	YES	1.00
5. PERSONALITY VARIABLES						
California Test of Personality:Self Reliance (CTP SELF RELY) Numbers are SCALED SCORES.	1	67	NO	NO	YES	.05
California Test of Personality:Sense of Personal Worth (CTP SELF WRTH) Numbers are SCALED SCORES.	1	68	NO	NO	YES	.05
California Test of Personality:Sense of Personal Freedom (CTP SELF FREE) Numbers are SCALED SCORES.	1	69	NO	NO	YES	.05
California Test of Personality:Feeling of Belonging (CTP FEEL BLNG) Numbers are SCALED SCORES.	1	70	NO	NO	YES	.05
California Test of Personality:Freedom From Withdrawing Tendencies (CTP WITH DRAW) Numbers are SCALED SCORES.	1	71	NO	NO	YES	.05
California Test of Personality:Freedom From Nervous Symptoms (CTP NRVS SYMP) Numbers are SCALED SCORES.	1	72	NO	NO	YES	.05

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 4

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
California Test of Personality: Social Standards (CTP SOCL NORM) Numbers are SCALED SCORES.	1	73	NO	NO	YES	.05
California Test of Personality: Social Skills (CTP SOCL SKIL) Numbers are SCALED SCORES.	1	74	NO	NO	YES	.05
California Test of Personality: Freedom From Anti-Social Tendencies (CTP ANTI SOCL) Numbers are SCALED SCORES.	1	75	NO	NO	YES	.05
California Test of Personality: Family Relations (CTP FMLY RLTN) Numbers are SCALED SCORES.	1	76	NO	NO	YES	.05
California Test of Personality: School Relations (CTP SCHL RLTN) Numbers are SCALED SCORES.	1	77	NO	NO	YES	.05
California Test of Personality: Community Relations (CTP TOWN RLTN) Numbers are SCALED SCORES.	1	78	NO	NO	YES	.05
6. PERSONAL HISTORY VARIABLES						
Family Marital Situation (FMLY MRTL SITN)-(1=Both Parents Present, 2=Divorced, 3=Mother Deceased, 4=Father Deceased, 5=Step-Parent Present)	p-1	16	NO	YES	YES	.30
Health (HLTH)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	p-1	4	NO	YES	YES	.30
Hearing (HEARING)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	p-1	6	NO	YES	YES	.35
Race (RACE)-(1=White, 2=Non-White)	p-1	1	NO	YES	YES	.10
Sex (SEX)-(1=Female, 2=Male)	p-1	2	NO	YES	YES	.10
Sibling Position (SPOT IN FMLY)-(1=Only Child, 2=Oldest of 2 Children, 3=Youngest of 2 Children, 4=Oldest of 3-5 Children, 5=Middle of 3-5 Children, 6=Youngest of 3-5 Children, 7=Oldest of 6+ Children, 8=Middle of 6+ Children, 9=Youngest of 6+ Children)	p-1	15	NO	YES	YES	.20

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 4

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Socio-Economic Status (SES):Deutsch Index-(1=Very Low, 2=Low, 3=Middle, 4=Upper-Middle, 5=Upper)	p-1	3	NO	YES	YES	.40
Vision (VI- SION)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	p-1	5	NO	YES	YES	.35
7. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS						
Parents' Attitude Toward School (PRNT FEEL SCHL)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	p-1	12	NO	YES	YES	.35
Teacher's Rating of Mother's Participation in the Home Visits (HOME VIST RATE)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k	13	NO	NO	YES	.35
8. TEACHER EVALUATION OF STUDENTS						
Attendance (ATTN DNCE). Average per cent of time present: (1=<85, 2=85-89, 3=90-94, 4=95-99, 5=>99)	k,1	11	NO	NO	YES	.15
Average Overall Grade (AVER GRDE)-(1=F, 2=D, 3=C, 4=B, 5=A)	k,1	14	NO	NO	YES	.05
Class Participation (INVL IN CLAS)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k,1	9	NO	NO	YES	.30
Classroom Behavior (CON DUCT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k,1	10	NO	NO	YES	.30
Distractability (DIST RACT BLTY) (1=very high, 2=high, 3=moderate, 4=low, 5=very low)	k,1	7	NO	NO	YES	.30
Peer Interaction (PEER INTR ACT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	k,1	8	NO	NO	YES	.30

CURRICULUM DESCRIPTIONS: APPENDIX V

Note: The following are abstracts prepared by the Utopia State University School of Education describing the Headstart curriculums which they developed and which will be used in this study.

The Cognitive Curriculum, developed during the five years of the Ypsilanti Perry Preschool Project, is a carefully structured program based primarily on principles derived from Jean Piaget's work on cognitive development. The cognitive program tries to provide a balance between teacher-initiated and child-initiated interaction. Teachers often talk with the children, but they also often listen to them and encourage them to interact with each other. The teachers initiate the most conversation during group, juice, and activity times, and the least during planning, work, and clean-up.

During all activities the teachers call attention to materials at different levels of abstraction. For the youngest children they select mainly real objects for discussion and manipulation. As the children learn new concepts at this level, the teachers gradually introduce materials to teach the same concept at higher levels of representation: index, symbol, and sign. As the children develop, the teachers move them more and more quickly through the levels of representation, though even the oldest begin new concepts at the real object level. Unlike the language training program, no child is ever intentionally started at the symbol (picture) or sign (word) level. The teachers accomplish the sequencing both by calling attention to the proper materials in the classroom, and by choosing which materials to set out in the room in the first place.

The style of the cognitive teachers, in fact, is seen most clearly in their attention to individual differences in cognitive development, and to careful sequencing of activities. Since the cognitive program does not stress the use of specific language training strategies, verbal interaction in the cognitive program seems to vary little from one activity to another. The teachers call for and pay attention to motor and verbal operation, and to the various levels of representation, in about the same proportions in all activities. Variations in the proportions seem to depend less on the activity than on differences in the children and in the content covered. In short, this program is guided by the child's initiative and abilities in relating to the environment.

The Language Curriculum, developed by Bereiter and Englemann at the University of Illinois, is a task-oriented program employing many techniques from foreign-language training and includes the teaching of arithmetic and reading. "Teaching" style in this program really means "verbal" style. This program is described by high-intensity verbal activities having several characteristics:

1. The activities are conducted in groups.
2. Teachers mainly solicit responses from the children, rather than respond to statements and behaviors initiated by the children.
3. The responses solicited are mainly verbal, not motor.
4. "Motor" responses generally do not include large muscle activity (like running or jumping), but focus instead on small muscle activities designed to test the children's conceptual knowledge (like pointing to the correct picture).
5. The verbal responses solicited are very specific words, phrases, or sentences.
6. Teachers inform the children immediately about whether their responses are right or wrong.
7. Relatively little deviance from the group tasks is tolerated.

The intense interaction is eased somewhat during juice time and during the fifteen-minute play time at the beginning of the day. At play time the teachers sometimes work with individual children to reinforce the language goals. They also intervene with groups of children, but mainly to prevent or stop conflicts that develop. At juice time the teachers occasionally reinforce the language goals, but only in ways that relate to eating their snack (for instance, "Take two cookies. How many? Two cookies."). In other respects, though, the teachers and aides enforce complete silence during juice time, a practice that makes juice time the quietest of any activity in any program.

Teachers are grounded in the belief of Bereitermann and Englemann that certain specific language abilities are necessary for success in school and that primary age children can and should be instructed in these skills. These skills center on the cognitive uses of language: standard grammar, reading and arithmetic.

The Unit-Based Curriculum, patterned after the traditional nursery school program, is a program which emphasizes the social-emotional development of the child. Much of the teaching style in the unit-based program comes from the broad range of its goals. Many alternative means, for example, are allowed to reach any one educational goal--a permissiveness that is possible because many goals are defined only in general terms. One result is that the teachers use a daily routine that involves minimal intervention with the children's choice of activities. Another result is that the room is richly stocked with materials that allow children to choose among alternatives. A third result is that teachers do not insist on specific language responses from the children, since many verbal responses are considered equivalent evidence of cognitive achievement. A fourth result is that teachers tolerate much behavior that would have to be considered deviant or nonproductive in the other programs, especially the language program.

"Teaching style" in the unit-based program, therefore, has a less precise meaning than in the other two programs. As in the cognitive program, the teachers plan and sequence activities; they expect a variety of motor and verbal responses from the children; and they encourage children to interact with each other. As in the language program, the teachers also sometimes require specific verbal responses from the children. But none of these strategies are used as consciously or systematically as in the other programs. As a result, the program appears both more spontaneous and less coherent than the other two programs. The behavior of the teachers and the children seem more unpredictable in this program than in the other two.

BASIC BACKGROUND DATA ON TEACHERS TRAINED AT UTOPIA UNIV. SCHOOL OF EDUCATION: APPENDIX VI

	Group 1 Piaget	
Age	21	25
Sex	F	M
Race	White	Black
Education	B.A. Expected	B.A. Expected
Experience	None	None
Grade in Student Teaching	B-	A-

	Group 2 Piaget	
Age	22	21
Sex	F	M
Race	Black	Black
Education	B.A. Expected	B.A. Expected
Experience	None	None
Grade in Student Teaching	B	B+

	Group 3 Language	
Age	23	41
Sex	F	F
Race	White	White
Education	B.A. Expected	B.A. Expected
Experience	None	Teacher's Aid
Grade in Student Teaching	A	A

	Group 4 Language	
Age	25	22
Sex	F	M
Race	White	Black
Education	B.A. Expected	B.A. Expected
Experience	None	None
Grade in Student Teaching	C	B

	Group 5 Unit Based	
Age	30	21
Sex	F	F
Race	White	Black
Education	B.A. Expected	B.A. Expected
Experience	Teacher's Aid	None
Grade in Student Teaching	B	A

Group 6 Unit Based

Age	22	20
Sex	M	M
Race	Black	White
Education	B.A. Expected	B.A. Expected
Experience	None	None
Grade in Student Teaching	A	B

Years of Training

Group 1 (Two Teachers)	2 yrs. Piagetian Training
Group 2 (Two Teachers)	2 yrs. Piagetian Training
Group 3 (Two Teachers)	2 yrs. Language Training
Group 4 (Two Teachers)	2 yrs. Language Training
Group 5 (Two Teachers)	2 yrs. Unit Based
Group 6 (Two Teachers)	2 yrs. Unit Based

APPENDIX VII

SPECIFIC GOVERNMENT REGULATIONS ON HEADSTART

The following represent the official U.S. government criteria for a child's admittance to a Headstart Program.

A. Children must turn three years old of their entering school year.

B. Children must score below 85 on a standard I.Q. test.

C. Children must score below a cutoff point on a family cultural deprivation index. "Low" on the Deutsch SES Index is suggested as such a cutoff point.

OTHER GENERAL REGULATIONS

D. All expenditures of monies must be in strict adherence with the budget unless the Capital Officer in Washington has approved of a change.

E. The Capital Office must be contacted monthly by phone and letter as to the progress of the project.

READING ASSESSMENT PROBLEM (READ)

Problem 005 has been deleted from these materials because of intractable problems in simulating data at discrete time periods.

FEHR - PRACTICUM

Request For Proposals

For

VALIDATION OF A TEACHER QUESTIONNAIRE (TQUEST)

RFP006

©

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OEG-0-72--529

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UNIVERSITY OF MICHIGAN

FEHR-PRACTICUM REQUEST FOR PROPOSALS (RFP)
RFP006:TQUEST

The Student-Faculty Committee on Instructional Evaluation in the School ofEducation at Utopia State College is soliciting proposals for the validation of a Course Evaluation Questionnaire developed by the committee during the past two semesters. Specific details of the content to be investigated are given in the attached problem description.

In general, projects will be funded in two separate phases. In phase I, a team is awarded a planning grant which will enable them to explore the extent and severity of the problem and to develop a proposal for an experimental study of the effects of the two available remedial programs as compared to present classroom practice. When an adequate proposal has been developed, the team will then be funded for phase II, in which they actually carry out the proposed research. A detailed description of the specific form and contents of the request for a planning grant and the research proposal are given in the Players' Instructions. In either case, the level of funding is subject to negotiation with the game manager.

A detailed description of the tasks involved in each phase of the project is provided in the INSTRUCTIONS section of the FEHR-PRACTICUM Players' Handbook. However, the time available and the needs of the players involved in a particular game vary from location to location. For that reason, the projects which may be funded under this RFP will vary widely in their scope, complexity, and degree of sophistication. The level of complexity expected from your team for this particular problem is specified in the itemized list of the work to be accomplished which appears later in this document.

The remainder of this RFP document is organized into three sections. The first section, entitled Problem Description, provides an overview of the problem, and describes the particular treatments (programs), research subjects, and variables which may be used in your study. In addition, it provides specific references to various sources of additional information. The second section provides a detailed list of the tasks to be performed by your team. The third section is a set of appendices providing detailed data on the various components described in section I. A table of contents appears at the beginning of this section.

PROBLEM DESCRIPTION: TEACHER QUESTIONNAIRE

The Problem: The School of Education has for many years routinely administered a questionnaire entitled Student Course Evaluation at the conclusion of each course. However, a number of faculty members have complained, over the years, that the instrument provided little information to help them plan needed changes in their courses. Last year, a student-faculty committee was formed to study the instrument, with the aim of improving its capacity for collecting information which could be used to improve a course. The committee developed a theoretical model which defined the dimensions which must be measured in order to provide the needed diagnostic information. Subsequently, the committee devised a questionnaire which they believe to be capable of measuring these dimensions.

It is your responsibility to validate the new questionnaire. Does it provide differential diagnoses? Are these differences related to real differences among instructors and classes? If information collected by the new instrument is fed back to instructors in the manner prescribed by the committee, will they modify their classes? The specific details of the model and copies of both questionnaires are provided in the committee's report, which appears in Appendix V of this description.

Research Population: The subjects to be used in this experiment are all the students taking the second course of forty, two-semester sequence graduate level courses. Twenty of these classes are required courses for most of the students taking them and twenty are nearly always taken on an optional basis.

Available Variables: The primary variables which you can "measure" in this problem consist of both the old and the new questionnaires with each item being a separate variable. In addition, each student's scores on the Graduate Record Examination and the grade he obtained in both courses of the sequence have been made available by the Registrar's Office. A complete listing of the available variables appears in Appendix IV.

Available Treatments: The treatments available in this problem consist of four different forms of feedback to instructors. Notice that because the treatment affects instructors, you must assign intact classes to a treatment. That is, it is impossible to assign some members of a class to one treatment and other members to another. However, for reasons of economy, you may decide not to measure all students within a class, although they all fill out the questionnaires. The treatments which are available are:

(1) Feedback only the summary from the old questionnaire.

(2) Feedback the summary from the old questionnaire plus summary information from the new questionnaire related to dependent variable 1: personal factors and dependent variables 6 through 11.

(3) Feedback the summary from the old questionnaire plus summary information from the new questionnaire related to dependent variable 2: communication factors and dependent variables 6 through 11.

(4) Feedback the summary from the old questionnaire plus summary information from the new questionnaire related to dependent variables 3 through 5: goals and dependent variables 6 through 11.

Note: The specific meanings of the above variables is given in the chart at the end of the Committee's report (see Appendix V).

Previous Research: Reports of previous research in this area are available in the Information Bank. See Appendix I for a list of titles.

CHECKLIST OF TASKS TO BE PERFORMED

Since the work to be accomplished under this RFP varies from location to location, your Game Manager has placed a ( ) before the particular items for which your team is responsible in the PRACTICUM. (If no items are checked, see your Game Manager before proceeding.) A detailed explanation of how to accomplish each task appears in the Instructions section on the page indicated at right. Tasks marked with an asterisk (*) are mandatory in every PRACTICUM. Before beginning, each player should study, interrelate, and synthesize the information contained in the RFP, its various appendices, and the relevant parts of the Fair City Booklet.

Assigned Tasks		Description of Task	Instructions Page
*	(1)	Each player should submit an Orientation Questionnaire to the Game Manager. The specific question to be answered are in the INSTRUCTIONS.	1
*	(2)	Form teams as directed by the Game Manager. The following assignments and requirements apply throughout this PRACTICUM: Team salary: $_____ per day. Costs are to be paid as indicated below: ___(a) ignore all costs ___(b) **pay** costs by check ___(c) pay costs with computer receipts Requests for file searches, survey and treatments should be: ___(a) entered by the team via PROMPTS ___(b) entered by the team via punch cards ___(c) written on the appropriate form and submitted to the Game Manager A Log of research activities: ___(a) to be kept by each player ___(b) to be kept by each team ___(c) no long necessary	1
*	(3)	Operationalize the problem observing the following restrictions: Literature: ___no review necessary ___Information Bank only ___Information Bank and regular library Definition: ___Problem definition provided by Game Manager ___complete problem definition form	3-5

Assigned Tasks		Description of Task	Instructions Page
_____	(4)	Determining Extent and Severity of the Problem ___4.1 Submit a Request for a Planning Grant on the form provided Due Date:______________________ Maximum Grant $__________________ ___4.2 Run File Search and/or Survey Maximum sample size:___________ Maximum number of variables____ (___independent; ___dependent) ___4.3 Analyze the data from 4.2 using appropriate statistical procedures ___4.4 Formal Problem Description (first draft). To be presented for critiquing by the other teams on (date)__________________________	5-7
_____	(5)	Funds are available for identifying a Pool of Research Subjects for Treatments ___Yes; ___No	7
_____	(6)	Empirical Evaluation of the Education Treatments ___6.1 Submit a Research Proposal to the Game Manager. The proposal must meet these restrictions and requirements: Maximum number of variables per observation: Dependent_____; Independent_____; Total_____ Maximum number of observation times_____ Maximum number of research subjects _____ Date proposal must be submitted_____ The maximum project budget is: $_____ The proposal should contain each item checked below: ___(a) abstract of the proposal ___(b) introduction and overview of problem	7-9

Assigned Tasks	Description of Task	Instructions Page

___(c) a review of the related literature from:
  ___the Information Bank only
  ___both the Information Bank and library
___(d) a formal statement of the problem
___(e) a description of the procedures to be used
___(f) a schedule of activities
___(g) an itemized budget

The writing style for the proposal is checked below:

___(a) brief outline
___(b) detailed outline
___(c) formal narrative

___6.2 Using an appropriate method, divide your sample into treatment groups, observing the restrictions given in Task 3. Run the experiment on the FEHR Data Generator. Data will be output on:

___(a) printed copy only
___(b) printed copy and punch cards
___(c) printed copy and the team's computer file

___6.3 Analyze and interpret the data from Step 6.2 using appropriate statistical procedures. Record restrictions (to be announced by the Game Manager) below:

____

____

___6.4 Submit a final report to the Game Manager. The report should contain the proposal items checked in 6.1 plus the items checked below:

___(h) the results of the field test
___(i) a summary of the statistical findings
___(j) a discussion of results culminating in an educational decision
___(k) a discussion of the limitations of the project

Assigned Tasks	Description of Task	Instructions Page
	___(l) recommendations for future research ___(m) an appendix containing the log(s) of activities The writing style of the final report should be: ___(a) brief outline ___(b) detailed outline ___(c) formal narrative Final report due date:____________	
_____ (7)	Attend a Consolidation Session (at a time to be announced by the Game Manager) to discuss the strengths and weaknesses of the strategies employed by your team, and any other teams which are attacking the same problem	9

APPENDICES
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APPENDIX IV	CATALOG OF VARIABLES	13-14
APPENDIX V	COMMITTEE REPORT	15-27
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APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 6
VALIDATION OF A TEACHER QUESTIONNAIRE

1. References Directly Related To This Problem.

Popham, W. James. The Institutional Objectives Exchange: Progress and Prospects. A Symposium presentation at the American Educational Research Association Annual Meeting. Minneapolis, Minnesota; March 2-6, 1970.

Rodin, Miriam and Burton. "Student Evaluation of Teachers," Science,, Vol. 177, Sept. 29, 1972, 1164-1166.

Sentag, Maurice and Pedhazur, Elazar. "Dimensions of Educational Attitudes: Factorial Congruence of Two Scales." Journal of Educational Measurement, 1972, 9(3), 189-198.

Shoemaker, David M., "Evaluating the Effectiveness of Competing Instructional Programs." Educational Researcher, 1972, 1(5), 5-8.

Warrington, W.G., "The M.S.U. Student Instructional Rating System (SIRS).", Paper read at AERA Symposium, Chicago, April, 1972.

2. Descriptive and Normative Information About Variables (Tests).

Graduate Record Exam.

APPENDIX II--RESEARCH POPULATION

The research population for the validation problem consists of the students of forty graduate two-semester courses. Each student has an I.D. consisting of three sections. The first two digits from the left identify the course classification: 01 means the course is required by most programs; 02 means the course is optional. The second section is the sub-unit index which identifies each different class within the two units. The third number, the person index, identifies the individual student within each class. For example, 01-05-032 means the class is required, the section is the fifth, and the student is number 32 in that class. Another example: the 32nd student in the fifth section of the optional courses would be 02-05-032. The hyphens are for clarity only. When entering these student I.D.'s into the computer, one would type 0105032 or 0205032, eliminating the hyphens. If you want to measure all the students in one class section, enter zeroes in the spot for the individual student digits. For example, 0105000 would provide the variable scores all students in the fifth section of a required course. This is entered into the computer as one I.D. So that when you enter this I.D. in the computer it represents one of the I.D.'s allotted to a line but you receive the results for that whole class section. There are 893 separate student I.D.'s in the research population for this problem. They are listed below.

The instructors are, in effect, part of the research population also. However, the instructor you select is determined by the class which you pick. Each instructor teaches two classes each semester. At the time you begin your research it is the beginning of the second semester and each instructor is teaching the last half of the two-semester sequence. It is possible to receive information from the questionnaires from the previous semester. In fact, the manner in which this information is disseminated to the instructors determines the kind of treatment it is you are evaluating. Of the two courses being taught by an instructor, one is generally taken as a required course and one is generally optional. The following research population is organized so that the instructor who is teaching required course one is also teaching optional course one. The instructor teaching required course five is also teaching optional course five, etc. A description of the instructors is available in Appendix VI.

Unit Index	Class Index (Sub-Unit)	Course Description	Class Size	Student I.D.'s Available
01	01	History & Philosophy of Ed. in the U.S. Deals with developments in Ed. in this century.	25	01-01-01 to 01-01-025
01	02	Philosophy of Ed. Concerned with the relationships of science & politics to Ed.	45	01-02-01 to 01-02-045
01	03	High School Supervision. Problems of Administration specifically related to High School.	18	01-03-01 to 01-03-018
01	04	Methods in Teaching Mathematics	23	01-04-01 to 01-04-023

Unit Index	Class Index (Sub-Unit)	Course Description	Class Size	Student I.D.'s Available
01	05	Methods in Teaching English	48	01-05-01 to 01-05-048
01	06	Methods in Teaching Science	28	01-06-01 to 01-06-028
01	07	Methods in Teaching a Foreign Language	15	01-07-01 to 01-07-015
01	08	Current Issues in Occupational Ed. Discusses the changing problems of vocational ed. & the growing field of adult occupational ed.	18	01-08-01 to 01-08-018
01	09	Education & Psychology. Discusses the effects of psychology on ed. & their present relationship	22	01-09-01 to 01-09-022
01	10	School Administration. Discusses generally the area of school ad.	18	01-10-01 to 01-10-018
01	11	Physical Education Methods (Lec.). Presentation of current methods in Physical Education	35	01-11-01 to 01-11-035
01	12	Physical & Psychological Growth of the Child. Presents systematically the facts & generalizations concerning the growth of children	20	01-12-01 to 01-12-020
01	13	Educational Statistics. Covers basic stat. techniques used in ed. research	15	01-13-01 to 01-13-015
01	14	Education Measurement Theory. Discusses the rationale for testing	12	01-14-01 to 01-14-012
01	15	Instructional Gaming. Discusses & identifies a wide variety of games	17	01-15-01 to 01-15-017
01	16	Guidance Counseling. Guidance counseling practices	22	01-16-01 to 01-16-022
01	17	Psychology of Learning. Discusses cognitive theories of B. Bloom & N. Chompsky	33	01-17-01 to 01-17-033
01	18	Deviant Psychology. Applies psychology to the school situation	16	01-18-01 to 01-18-016
01	19	Ethnic Differences in Schools. Takes a historical & personal look at racial conflict in schools	38	01-19-01 to 01-19-038

Unit Index	Class Index (Sub-Unit)	Course Description	Class Size	Student I.D.'s Available
01	20	Special Education. Takes an overview of the field	6	01-20-01 to 01-06-020
02	01	Philosophy of Education. Concerned with the relationship of science & politics to ed.	20	02-01-01 to 02-01-020
02	02	Legal Basis of Education in the U.S. Attempts to discover the legal principles in practical problems of public school administration	60	02-02-01 to 02-02-060
02	03	Social Studies Curriculum	21	02-03-01 to 02-03-021
02	04	New Approaches to Mathematics Curriculum	18	02-04-01 to 02-04-018
02	05	The Role of the English Class in Modern Schools	45	02-05-01 to 02-05-045
02	06	Science Curriculum	26	02-06-01 to 02-06-026
02	07	Foreign Language Curriculum	16	02-07-01 to 02-07-016
02	08	Continuing Education. Discusses the new horizons in adult ed.	13	02-08-01 to 02-08-013
02	09	Personality Theory. A more in-depth presentation of psych. theories of personality	21	02-09-01 to 02-09-021
02	10	Elementary School Supervision. Problems of administration directly related to elementary schools	12	02-10-01 to 02-10-012
02	11	Physical Education Theory, (Seminar) Discusses new approaches & attitudes in Physical Ed.	10	02-11-01 to 02-11-010
02	12	Socialization of the Child. Discusses the interactions between the child & society	8	02-12-01 to 02-12-008
02	13	Multivariate Analysis - advanced statistics	6	02-13-01 to 02-13-006
02	14	Research Design & Evaluation. Discusses how to carry out research	28	02-14-01 to 02-14-028
02	15	Simulation Theory. Discusses the principles & strategies behind games	14	02-15-01 to 02-15-014

Unit Index	Class Index (Sub-Unit)	Course Description	Class Size	Student I.D.'s Available
02	16	Growth of Self. Discusses affective aspects of ed.	26	02-16-01 to 02-16-026
02	17	Current Issues in Education. Discusses the trends in ed. over the last 20 years, particularly integration	23	02-17-01 to 02-17-023
02	18	Dynamics & Clinical Management of Disturbed Children. Presents psychological characteristics of such children & how to amieliorate them	13	02-18-01 to 02-18-013
02	19	Curriculum for Presentation of Cultural Differences. Discusess the need for ethnically oriented schools	34	02-19-01 to 02-19-019
02	20	Perceptually Handicapped Child. Looks at programs in this field	5	02-20-01 to 02-20-005

APPENDIX III

CATALOG OF TREATMENTS

The treatments available in this problem appear in the chart below. When entering requests, identify each treatment with the number given in INDEX column.

INDEX	CODE NAME	TREATMENT DESCRIPTION	FIX COST TO SET UP PROG.	SET-UP COST PER STUDENT	OPERATING COST
01	CONTROL	Feedback only the summary from the old questionnaire.	$0	$10	NA
02	PERSONAL	Feedback the summary from the old questionnaire plus summary information from the new questionnaire related to dependent variable 1: personal factors and dependent variables 6 through 11.	$0	$10	NA
03	EFFORT	Feedback the summary from the old questionnaire plus summary information from the new questionnaire related to dependent variable 2: communication factors and dependent variables 6 through 11.	$0	$10	NA
04	RELEVANCE	Feedback the summary from the old questionnaire plus summary information from the new questionnaire related to dependent variables 3 through 5: goals and dependent variables 6 through 11.	$0	$10	NA

Time Units. In this problem the time unit is a semester.

Available Times. The only times available for either measuring or treatments are the beginning of the second semester (time = 00) and the end of the semester (time = 01).

Treatment Units. In this problem the treatment unit is a class; therefore, all students in a particular class must use the same treatment.

Observation or Testing Times. During a treatment it is possible to "measure" variables at both time 00 and 01.

Note: The costs listed above do not include per/person test costs, although those costs will be included in the assessed charge when tests are given during treatments. (See Catalog of Variables for these costs.) There are no other overhead costs for administering tests during treatments.

APPENDIX IV

CATALOG OF VARIABLES
TEACHER QUESTIONNAIRE

TABLE OF CONTENTS

There are three types of variables available in this problem.

TYPE		PAGE
I.	ACHIEVEMENT VARIABLES	15
II.	QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS	15
III.	TEACHER EVALUATION OF STUDENTS	15

Note 1: The category, AVAILABLE ON: FILE SURV TREAT identifies the process by which individual variables can be retrieved. That is, if there is a "YES" under FILE, the variable can be retrieved via a File Search. If there is a "YES" under SURV, the variable can be measured via a Survey. If there is a "YES under TREAT, the variable can be measured during a Treatment.

Note 2: The category, PRICE/PERSON indicates costs of variable scores measured via survey and during treatment ONLY. All variables are available for 1¢.

Note 3: Assume that all file search data were collected at the end of the last semester, December 23. Assume all data via a survey will be collected at the beginning of the second semester, January 7, time 00. Likewise, add data collected at time 00 of a treatment is January 7.

COSTS WHICH MAY BE INCURRED DURING TQUEST

FILE SEARCH

1. Fixed overhead charge for initiating a search	$0.00
2. Overhead costs of entering units	$0.00
3. Overhead costs of entering sub-unit files	$0.00
4. Cost of variable scores	$0.01

SURVEY

1. Fixed overhead charge for initiating a survey	$0.00
2. Overhead costs of entering units	$0.00
3. Overhead costs of administering tests to sub-units	$0.00
4. Cost of variable scores	$0.01

SECRETARY

1. Fixed overhead costs for initiating use of secretary	$10.00
2. Cost of secretary per student	$00.10

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 6

Variable Description	Variable Availability on Index	File	Surv	Treat	Price/ Person
1. ACHIEVEMENT VARIABLES					
Graduate Record Exam: Verbal Score (GRE VERB ABIL) Numbers are SCALED SCORES.	58	Yes	No	No	.01
Graduate Record Exam: Numeric Score (GRE NUM AVIL) Numbers are SCALED SCORES.	59	Yes	No	No	.01
2. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS					
New Questionnaire Items appear on pages 22-26. The Item number is the variable index number.	1-50	Yes	Yes	Yes	.01
Old Questionnaire Items appear on pages 27-28. The Variable Index is found by adding 50 to the Item number.	51-57	Yes	Yes	Yes	.01
3. TEACHER EVALUATION OF STUDENTS					
Grade in Course (GRDE 6-PT SCLE)-(1=No Credit, 2= B-, 3=B, 4=B+, 5=A-, 6=A)	60	Yes	Yes	Yes	.01

APPENDIX V

UTOPIA UNIVERSITY
SCHOOL OF EDUCATION

Report of the Ad Hoc Committee on Course Evaluation

This committee was charged with reviewing the present course evaluation procedure and recommending any changes we deemed necessary. Our current legislation requires each instructor to administer a student questionnaire (Student Course Evaluation) to each class he teaches during the last scheduled class meeting. The questionnaires are then collected by a student and returned to the Office of Evaluation Services, which subsequently provides the instructors and the Dean's Office of the results. The summary included the item means and standard deviations for the instructor's class and the average figures for all instructors in the school.

On analyzing the current instrument, the committee was struck by the fact that the analyzed data generally did not provide information which would help an instructor decide how to improve his course. In addition, it made no attempt to control for such obviously biasing factors as the proportion of students in the class who were specializing in the content area of the course. At this point, we decided that we needed to review the purposes of course evaluation before suggesting changes.

A RATIONALE

We believe that the only legitimate purpose for course evaluation questionnaires is to improve the quality of our education offerings. We further believe that instructional improvement occurs only when the individuals concerned perceive a need for change. To put it another way, we believe that only self-evaluation can produce a functional improvement in instruction. In this view, the major role of the institution is, first, to develop an evaluation process which motivates individuals to conduct evaluations and, second, to provide them with the consultive services they need to accomplish a useful evaluation. The institution might require each instructor to evaluate every course he teaches, and that the evaluation process used be consistent with scholarly practice. It would not attempt to control the particular process used.

We state as our first axiom that instruction is intrinsically a goal-oriented activity. It therefore follows that an instructional evaluation should have two dimensions: effectiveness and relevance. The effectiveness of an educational activity is the degree to which the instructional goals were achieved. The relevance of the activity involves both the degree to which the instructional goals are related to the students' total training programs, and the degree to which the program goals are related to the educational needs of the students in the program and of society as a whole.

Evaluation involves both making observations and rendering judgments. Paulson (1970) has provided a more comprehensive definition.

> Evaluation is defined as a process of examining certain objects and events in the light of specified value standards for the purpose of making adaptive decisions. The crucial dimension of this definition is the assigned task of providing relevant and valued information which may serve the decision process. Our concern is to provide the decision-making body with information specifically related to a given value, and that will subsequently improve the quality of the decisions to be made. This does not imply that evaluation will insure perfect decisions, but rather that decisions based upon appropriate data will be improved.

Applying this definition to course evaluation is revealing. Course evaluation becomes the process of examining the people, materials and events associated with a course in the light of the explicit goals, standards, and expectations which have been set for it. Perhaps the most significant attribute of this view is that evaluation clearly becomes criterion-referenced rather than norm-referenced. Observations about one course are not judged by comparing them to observations from other courses but by comparing them to the standards set up for that specific course. Instructors are not compared with one another, but with criteria and standards (which they help to define).

Aspects to Evaluate in a Course

Models of educational evaluation such as that of Stake (1967) or Stufflebeam, et.al. (1971) suggest that evaluation should be the describing and judging of an educational program (or course) in terms of the inputs, process, outputs and goals of that program.

The inputs to a course are the students that enter it, and the materials, staff and planning which are invested in it. Courses are usually not meant for all students, but for a definable set with certain preparation, interests and needs. Basic resources like classrooms, lab equipment, books, media, library services, and a staff which includes appropriate teaching assistants or clerical helps are all inputs. All of these inputs should be determined to some extent by the goals of the course. They are going to aid or inhibit the teaching effectiveness of the course and therefore should be objects of evaluation.

The process in a course includes all of the day-to-day interactions between the student and instructors, between students and students (e.g., in discussions or peer-teaching), and between the student and books, media or self-instructional materials. Process includes what the instructor(s) and students actually do during each phase of the course. The goals of a course tell us what kind of teaching methods (seminar, fieldwork, etc.) and processes we should set in motion. The nature and quality of these processes will perhaps have the greatest impact on course effectiveness.

The outputs from a course include the changes in students (new knowledge, skills, attitudes, etc.) which are consequences of the course. They may be short or long term, thought of in terms of one student or a whole group, related to other courses in the university or to definable jobs or skills needed after graduation. Some outcomes are more difficult to define or more difficult to gather information on. This does not mean that they are indefinable but that it will take us longer to adequately define them. One way to achieve definitions of outcomes is to precisely observe and analyze the attributes of two kinds of people: (a) those whom we feel have already achieved the outcomes we desire, and (b) those who have not. An observation technique which was constructed to distinguish between these two kinds of people would play a central role in output evaluation.

The goals of a course are its most important reference points. They are statements of intended outputs. The literature on defining measurable educational goals and objectives is volumonous. The reader is refered to Yelon and Scott (1970) or Popham and Baker (1970). Briefly, objectives define what a person (the learner, the instructor, etc.) is intended to do, under what conditions, and to what degree. But the specification of goals does not simply mean putting whatever is currently done in a course into operational, measurable terms with conditions and criteria for completion. It is also important that an in-depth search be conducted for the ultimate goals and standards of the entire "audience" (students and society) served by a course. This involves the analysis of what needs exist in society at large and what tasks people actually have to do to fill those needs.

When to Evaluate

It is obvious that a comprehensive evaluation of this sort is too time-consuming to be conducted for each course every time it is offered. Consequently, we propose that a comprehensive evaluation of each course be required on a cyclic basis--perhaps only once every two or three years. However, to provide for continuous feedback on each course, we recommend that a survey of student perceptions be conducted in each course every term.

Feedback

Our emphasis on feedback raises another important question: feedback to whom? As mentioned previously, we believe that the only effective evaluation is self-evaluation. However, we recognize a collective responsibility for the goals of a course at both the program and the school level. Collective responsibility is clearly evidenced in our procedures for creating new courses. Therefore assessment of the relevance dimension clearly concerns more than just the individual instructor; the program and indeed the school as a whole should be involved. The principle of collective responsibility for instructional quality gives explicit recognition to the fact that many of the parameters of course quality are beyond the control of individual instructors. Our present practice is based on the implicit and erroneous assumption that the only way to improve instructional quality is to improve the instructor's teaching practice. While we support the goal of improved practice, we can think of at least two ways in which the effective quality of a course may be improved by collective action. First, the match between student needs and course purposes can be improved by improving the procedures for recruiting students for the course and/or by modifying the goals of the course. Second, we could improve the match between instructor competencies and course goals by reshuffling the assignment of courses to instructors. It is important that the evaluation system adopted encourages both collective and individual actions to upgrade courses and programs. In particular, we should not assume that a given instructor can or should teach all course contents equally well.

PROPOSED SYSTEM

The instructional evaluation system proposed here consists of two separate processes which we have labelled comprehensive evaluation and routine evaluation. We recommend that every program and every course within each program should conduct a comprehensive evaluation at least once every three years. Routine evaluations of both programs and courses should be conducted each semester, to provide continuous feedback, and to help determine whether a comprehensive evaluation should be conducted earlier than its scheduled date. For example, we may find that some required courses need intensive evaluation more frequently than once every three years. A detailed description of each process is presented below.

I. The Comprehensive Evaluation of a Course

It is not possible to prescribe a general set of instruments nor even one general evaluation technique: the instruments and techniques are largely idiosyncratic to the instructional goals of the course. However, it is possible to specify the process by which an adequate evaluation can be accomplished. Although we expect many of the operational details to be modified with experience, we presently envisage a four-step process along the following lines:

Step 1. Prior to the term in which the comprehensive evaluation is to be made, the instructor, with appropriate program consultation (and, hopefully, with the help of an evaluation consultant provided by the school) prepares a comprehensive list of his course goals stated in operational terms. (We consciously chose not to use the term "behavioral objectives" because it usually implies a focus on discrete individual skills rather than overriding purposes.)

Step 2. The instructor and faculty representatives from the program(s) to which his course contributes collectively, assess the degree of agreement between program goals and course goals. If there is disagreement, adjustments are made in one or both of the goal statements. Negotiation continues until there is consensus about the statement of course goals.

Step 3. The instructor (again, hopefully, with the help of an evaluation consultant) collects evidence which will allow him to assess the degree to which each objective has been achieved. In general, evidence from each of the following sources will be included:

(1) Perceptions of students in the class during the evaluation term.
(2) Perceptions of former students in the class.
(3) Achievements of students in the class during the evaluation term.
(4) Where appropriate, the achievement of former students in subsequent courses and/or former students' on-the-job success.

Step 4. The faculty member submits a written report to the program(s) concerned. The report should identify both strengths and weaknesses, successes and failures, and it should include detailed recommendations for any remedial actions which the author deems necessary. We expect that the report would be followed by a full and frank group discussion of its implications for the program as a whole. In particular, the discussion should consider the implications for staff-allocation decisions.

NATURE OF THE ROUTINE QUESTIONNAIRE

The routine questionnaire should meet the following criteria:

(1) It should permit the independent assessment of both goals per se (relevance) and goal attainment (effectiveness).

(2) It should monitor the goal-discussion process (see items 1, 2, and 3 under routine evaluation of courses) in such a way as to encourage a student-instructor dialogue; e.g., is more discussion of course goals desirable?

(3) It should contain items which permit sources of variation extraneous to the assessment of goals and goal attainment to be controlled.

Questionnaire Model

The model outlined below identifies a number of dimensions which the questionnaire attempts to measure. The dimensions are grouped into independent and dependent variables. In this context, any variable which cannot be changed by the course in question is considered independent. Dependent variables are those which vary as a direct result of the course.

The proposed questionnaire (attached) contains one or more items for each of the dimensions listed. In addition, several items were included which had proven useful in other systems--even though they (the items) bore no direct relationship to the model. These are grouped under the miscellaneous label in the model below. It is believed that statistical analysis will show many of the miscellaneous items actually belong to the existing dimensions--in which case they may safely be dropped. However, it seemed prudent to include them on the chance that they would form a new dimension (i.e., one not identified a priori).

DIMENSION TO BE MEASURED	QUESTIONNAIRE ITEMS
Part I. Independent Variables	
(1) Sex	1
(2) Race	2
(3) Academic department	3
(4) Reason for taking course	4
(5) General academic prowess	5
(6) Entering attitude to content	6,8,9
(7) Type of course	7
(8) Degree of preparation	44

DIMENSION TO BE MEASURED	QUESTIONNAIRE ITEMS
Part II. Dependent Variables	
(1) Personal factors	
(a) amount of individual attention	18,26
(b) amount of work required	34,45
(2) Communication factors	
(a) communication of course goals	10
(b) communication of evaluation criteria	30
(c) feedback on student progress	20,27
(3) Relevance of goals	
(a) to the student personally	11,40
(b) to the program	50
(c) to the needs of society	12
(4) Effectiveness in goal attainment	13,31
(5) Interactions of goals with	
(a) instructional procedures	14
(b) evaluation procedures	15,33
(c) texts and materials	36
(6) Organization and pacing	41,42,46
(7) Difficulty of course content	17
(8) Instructor scholarship	16
(9) Instructor personal factors	35,38,39
(10) Course-program match	50
(11) Miscellaneous	19,21-25,28,29,32, 37,43,44,47-49

VALIDATION PLAN

We should expect that feedback of new questionnaire results should produce some fairly immediate and obvious changes in those dimensions which are relatively independent of the areas measured by the old instrument and, at the same time, easily changed by an instructor. We propose that results on dependent variables (1), (2) or (6) be fed back to selected instructors and the resulting changes on subsequent ratings compared with those of a control group having no feedback beyond the traditional summary data from the old questionnaire. We have solicited the cooperation of a group of twenty professors teaching two-semester classes for validation purposes.

Copies of both questionnaires are appended to this document.

PROPOSED NEW QUESTIONNAIRE

Part I. Information used to help interpret your ratings.

1. Please indicate your sex status. This information is useful in helping the school determine whether it is meeting its commitments to females (items are listed alphabetically).

    (1) Female
    (2) Male

2. Please indicate your racial status. This information is useful in helping the school determine whether it is meeting its commitments to minorities (items are listed alphabetically).

    (1) Black
    (2) White

3. Which of the following academic departments do you consider your "home base?"

    (1) Department A: Educational Administration
    (2) Department B: Educational Psychology
    (3) Department C: Curriculum and Instruction
    (4) Department D: Guidance and Counseling
    (5) Department E: Historic and Philosophical Foundations of Education

4. Which one of the following was your most important reason for selecting this course?

    (1) It was required (either explicitly or implicitly)
    (2) Faculty advisor or friends recommended it
    (3) Thought I could make a good grade
    (4) Subject matter was of interest
    (5) Teacher's excellent reputation

5. What is your approximate cumulative grade point average on 4-point scale?

    (1) Less than 1.99
    (2) 2.00 to 2.49
    (3) 2.50 to 2.99
    (4) 3.00 to 3.49
    (5) 3.50 to 4.00

6. What grade do you expect on this course?

    (1) Incomplete
    (2) D or less (or Fail on a pass-fail option)
    (3) C
    (4) B (or Pass on a pass-fail option)
    (5) A

7. Which of the following best describes the primary emphasis in this course?
   - (1) A laboratory course in which certain skills are developed through student practice.
   - (2) A seminar: most of the knowledge and/or skill was introduced by the students per se or else developed as a result of class discussion.
   - (3) A lecture course: that is, the instructor supplied information the students are expected to learn.
   - (4) An experiential course, i.e., the content of the course is the experience you go through.

8. On the average, I have found other courses of this type and in this content are to be:
   - (1) No experience with courses of this type.
   - (2) Of no practical use to me.
   - (3) Of little practical use to me.
   - (4) Of some practical use to me.
   - (5) Of considerable practical use to me.

9. On the average, I have found other courses of this type and in this content area to be:
   - (1) No experience with courses of this type.
   - (2) Boring, uninteresting.
   - (3) Mildly interesting.
   - (4) Interesting, somewhat challenging.
   - (5) Very interesting, challenging, stimulating.

Part 2. Please rate this course with respect to items 10-43 by blackening the number of the appropriate response according to the following key:

(1) If you strongly disagree with the statement
(2) If you disagree with the statement
(3) If the statement is not applicable or if you don't know
(4) If you agree with the statement
(5) If you strongly agree with the statement

(1)(2)(3)(4)(5) 10. The goals and purposes of this class were clearly communicated.

(1)(2)(3)(4)(5) 11. It is important to me personally to achieve the goals of this course.

(1)(2)(3)(4)(5) 12. The goals of this course need to be revised to become relevant to contemporary society.

(1)(2)(3)(4)(5) 13. In my opinion, the instructor has accomplished (is accomplishing) his major goals for this course.

(1)(2)(3)(4)(5) 14. The instructional procedures in this class were well suited to the objectives.

(1)(2)(3)(4)(5) 15. The evaluation procedures were well suited to the objectives.

(1)(2)(3)(4)(5) 16. The instructor is knowledgeable about this content area.

(1)(2)(3)(4)(5) 17. The instructor maintained definite standards of student performance.

(1)(2)(3)(4)(5) 18. The instructor provided an adequate amount of individual help.

(1)(2)(3)(4)(5) 19. Lectures were too repetitive of what was in the texts or readings.

(1)(2)(3)(4)(5) 20. The instructor provided adequate feedback on student performance.

(1)(2)(3)(4)(5) 21. The instructor was generally well-prepared for each class.

(1)(2)(3)(4)(5) 22. The instructor summarized or emphasized major points in lectures, discussions, or laboratory exercises.

(1)(2)(3)(4)(5) 23. The instructor used class time well.

(1)(2)(3)(4)(5) 24. The instructor seemed to know when students didn't understand the material.

(1)(2)(3)(4)(5) 25. The instructor encouraged students to think for themselves.

(1)(2)(3)(4)(5) 26. The instructor seemed genuinely concerned with students' progress and was actively helpful.

(1)(2)(3)(4)(5) 27. The instructor made helpful comments on papers or exams.

(1)(2)(3)(4)(5) 28. The instructor raised challenging questions or problems for discussion.

(1)(2)(3)(4)(5) 29. In this class I felt free to ask questions or express my opinions.

(1)(2)(3)(4)(5) 30. The instructor told students how they would be evaluated in the course.

(1)(2)(3)(4)(5) 31. My interest in the subject area has been stimulated by this course.

(1)(2)(3)(4)(5) 32. The scope of the course has been too limited; not enough material has been covered.

(1)(2)(3)(4)(5) 33. Examinations reflected the important aspects of the course.

(1)(2)(3)(4)(5) 34. I have been putting a good deal of effort into this course.

(1)(2)(3)(4)(5) 35. The instructor was open to other viewpoints.

(1)(2)(3)(4)(5) 36. The text was adequate for the purposes of this course.

(1)(2)(3)(4)(5) 37. Too much of the course repeated content covered by courses I had taken previously.

(1)(2)(3)(4)(5) 38. The instructor's speech was easy to understand.

(1)(2)(3)(4)(5) 39. The instructor displayed favoritism.

(1)(2)(3)(4)(5) 40. The instructor related course materials to real life situations.

(1)(2)(3)(4)(5) 41. Too much time was spent on too few topics--the course needs more breadth.

(1)(2)(3)(4)(5) 42. Too little time was spent on each topic--the course needs in-depth coverage of fewer topics.

(1)(2)(3)(4)(5) 43. The evaluation procedures placed too much emphasis on the memorization of detailed information.

Blacken one response number for each question:

44. For my preparation and ability, the level of difficulty of this course was:

(1) Very elementary
(2) Somewhat elementary
(3) About right
(4) Somewhat difficult
(5) Very difficult

45. The work load for this course in relation to other courses of equal credit was:

(1) Much lighter
(2) Lighter
(3) About the same
(4) Heavier
(5) Much heavier

46. For me the pace at which the instructor covered the material during the term was:

(1) Very slow
(2) Somewhat slow
(3) Just about right
(4) Somewhat fast
(5) Very fast

47. To what extent did the instructor use examples or illustrations to help clarify the material?

(1) Nearly always
(2) Frequently
(3) Occasionally
(4) Seldom
(5) Never

48. Was class size satisfactory for the method of conducting the class?

(1) Yes, most of the time
(2) No, class was too large
(3) No, class was too small
(4) It didn't make any difference one way or the other

49. Considering the goals of this course, the amount of responsibility and authority delegated to students was:

(1) Far too little
(2) Too little
(3) About right
(4) Too much
(5) Far too much

50. From the standpoint of the majority of students, which of the following best describes the relation of this course to your program? The course is:

(1) Superfluous or redundant
(2) Of marginal benefit
(3) Beneficial but not necessary
(4) Extremely beneficial
(5) Absolutely essential

UTOPIA UNIVERSITY
SCHOOL OF EDUCATION
OLD QUESTIONNAIRE
STUDENT REPORT ON TEACHING

The School of Education is anxious to make each course of greatest possible value to the students, and recognizes that in each one there will probably always be room for improvement. Thoughtful student reactions have proved valuable to the instructors and the School.

You have an opportunity in this report to pass on to your instructor your comments and suggestions without identifying yourself. Your responses will be strictly anonymous. Please make your responses individually and conscientiously, since your suggestions will be used to improve the course in coming semesters. Your evaluations will NOT be available to your instructor until after all grades have been reported.

If, for some reason, you are uncomfortable about completing this report at this time, please come to the Dean's Office at your convenience to fill one out privately.

DIRECTIONS

Circle the number before the one phrase which best represents your choice. If you wish, write in remarks which may qualify or supplement your response. All questionnaire items are scaled from 1-5. Consider the midpoint in the scale to be average. Think of those teachers or learning situations which in your experience have been unusually superior, and reserve [1] for truly exceptional and [5] for its opposite extreme.

---

1. How would you rate your instructor in general (all-around) teaching effectiveness?

   [1] An outstanding and stimulating instructor
   [2] A very good instructor
   [3] A good instructor
   [4] An adequate instructor
   [5] A poor and inadequate instructor

2. How would you rate the overall value of this course?

   [1] Superior
   [2] Very good
   [3] Good
   [4] Fair
   [5] Poor

3. How well does your instructor seem to know the subject?

   [1] Thorough and profound scholarship
   [2] Knowledge broad and accurate
   [3] Adequate knowledge
   [4] Occasional gaps in knowledge
   [5] Inadequate knowledge

4. How clearly does your instructor present his subject?

   [1] Exceedingly clear in presentation
   [2] Very clear in presentation
   [3] Clearly
   [4] Not very clearly
   [5] Not at all clear in presentation

5. How interesting does he make the material?

   [1] Exceedingly interesting
   [2] Very interesting
   [3] Interesting
   [4] Not very interesting
   [5] The course is a bore

6. How objective do you consider your instructor?

   [1] Encourages differences in viewpoint
   [2] Permits expression of different points of view
   [3] Usually tolerant
   [4] Seldom permits expression of different points of view
   [5] Intolerant, allows no contradiction

7. How much individual help do you feel you are able to get in this course?

   [1] A great deal
   [2] Quite a bit
   [3] Some
   [4] Little
   [5] None

APPENDIX VI

Teacher Descriptions:

The number at left signifies the class in each division being taught by one teacher. Each teacher conducts two classes. If a teacher is in charge of class 01 of the required courses, he is in charge of class (sub-unit) 01 of the optional. The teacher in charge of class 05 required is also in charge of class 05 optional, etc.

Class or Sub-Unit	Teacher	Description
01	Don Hewey	New teacher who looks like he might publish a lot.
02	Martha Model	One of the best teachers in the college.
03	Harry Rabbit	Erratic teaching both in subject matter and style.
04	Sylvia Tongue	Very entertaining but doesn't say much.
05	Harold Hosit	Very well liked and students learn a lot.
06	Hiram Hiram	First year, unknown.
07	Clay Harding	Hard-nosed empiricist, demanding.
08	Don Average	Pleasant, moderately demanding.
09	Sandy Koufax	New but fast making an impression.
10	Walter Applegate	New teacher but has lots of experience. Well known.
11	Ronald Oneway	Good lecturer, handles discussions poorly.
12	Bill Big	Very well known, tends to be arrogant.
13	William Chamberlain	Well known scholar, well liked.
14	Stan Benit	Great lecturer.
15	Jim Parker	Breaking new ground.
16	Jerry Open	Well liked, little work.
17	Toulouse Lautrec	Well liked.
18	Loulou Freud	Brilliant, a little radical sometimes.
19	Henry Kissenger	Good guy, wrong field.
20	Mark Wantsit	Doesn't have it, incompetent.

FEHR - PRACTICUM

Request For Proposals

For

REMEDIAL MATH FOR ADULTS (RMA)

RFP007

©

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OEG-0-72--529

LEVERNE S. COLLET
4215A SCHOOL OF EDUCATION BUILDING
UNIVERSITY OF MICHIGAN

FEHR-PRACTICUM REQUEST FOR PROPOSALS (RFP)
RFP007:REMEDIAL MATH FOR ADULTS

The Fair City Community College is soliciting proposals for the evaluation of its Remedial Mathematics for Adults course. Specific details of the content to be investigated are given in the attached description.

In general, projects will be funded in two separate phases. In phase I, a team is awarded a planning grant which will enable them to explore the extent and severity of the problem and to develop a proposal for an experimental study of the effects of the two available remedial programs as compared to present classroom practice. When an adequate proposal has been developed, the team will then be funded for phase II, in which they actually carry out the proposed research. A detailed description of the specific form and contents of the request for a planning grant and the research proposal are given in the Players' Instructions. In either case, the level of funding is subject to negotiation with the game manager.

A detailed description of the tasks involved in each phase of the project is provided in the INSTRUCTIONS section of the FEHR-PRACTICUM Players' Handbook. However, the time available and the needs of the players involved in a particular game vary from location to location. For that reason, the projects which may be funded under this RFP will vary widely in their scope, complexity, and degree of sophistication. The level of complexity expected from your team for this particular problem is specified in the itemized list of the work to be accomplished which appears later in this document.

The remainder of this RFP document is organized into three sections. The first section, entitled Problem Description, provides an overview of the problem, and describes the particular treatments (programs), research subjects, and variables which may be used in your study. In addition, it provides specific references to various sources of additional information. The second section provides a detailed list of the tasks to be performed by your team. The third section is a set of appendices providing detailed data on the various components described in section I. A table of contents appears at the beginning of this section.

PROBLEM DESCRIPTION: REMEDIAL MATH FOR ADULTS

The Problem: The Fair City Community College, which is open free to all adult residents of the city, has for several years offered a non-credit programmed course entitled Remedial Mathematics for Adults (RMA). This course was developed in response to requests from all sectors of the population a community college attracts; housewives, white collar workers, the unemployed and others, including students just out of high school. This course is intended to provide the students taking it with skills which will enhance their position on the job market or to prepare them for college-level work. (A detailed description of the course can be found in Appendix V.)

This year the state government has found it necessary to restrict the Community College's educational budget. Consequently, the college is under pressure to evaluate the effectiveness of all its courses including RMA, which has not previously been evaluated. In addition, the faculty is interested in determining how this course can be improved. It is your responsibility to meet these objectives. Unfortunately, due to time limitations, you will not be able to observe this course for more than one semester.

The Research Population: The population will consist of the 251 students who have preregistered for the class. These students have not yet received the SAT (COMP) to determine if they meet the college's standards for taking the course. The standard states that a person must score less than 25 out of the 31 questions on this test. Unfortunately, due to the difficulty of finding qualified instructors, only four were found, the enrollment for this program during the coming semester must be limited to 120 students. You have the opportunity of placing students in classes as you see fit. (Appendix II).

Available Variables: There are 26 available variables on each subject. These range from descriptions of the student to achievement tests. You should check the Index of Variables (Appendix IV) to determine which variables are available and under what conditions.

Available Treatments: In this problem there is only one treatment--the RMA course.

Previous Research: Reports of previous research are available in the Information Bank. See Appendix I for a list of titles.

CHECKLIST OF TASKS TO BE PERFORMED

Since the work to be accomplished under this RFP varies from location to location, your Game Manager has placed a ( ) before the particular items for which your team is responsible in the PRACTICUM. (If no items are checked, see your Game Manager before proceeding.) A detailed explanation of how to accomplish each task appears in the Instructions section on the page indicated at right. Tasks marked with an asterisk (*) are mandatory in every PRACTICUM. Before beginning, each player should study, interrelate, and synthesize the information contained in the RFP, its various appendices, and the relevant parts of the Fair City Booklet.

Assigned Tasks		Description of Task	Instructions Page
_*_	(1)	Each player should submit an Orientation Questionnaire to the Game Manager. The specific question to be answered are in the INSTRUCTIONS.	1
_*_	(2)	Form teams as directed by the Game Manager. The following assignments and requirements apply throughout this PRACTICUM: Team salary: $_____ per day. Costs are to be paid as indicated below: ___(a) ignore all costs ___(b) **pay** costs by check ___(c) pay costs with computer receipts Requests for file searches, survey and treatments should be: ___(a) entered by the team via PROMPTS ___(b) entered by the team via punch cards ___(c) written on the appropriate form and submitted to the Game Manager A Log of research activities: ___(a) to be kept by each player ___(b) to be kept by each team ___(c) no long necessary	1
_*_	(3)	Operationalize the problem observing the following restrictions: Literature: ___no review necessary ___Information Bank only ___Information Bank and regular library Definition: ___Problem definition provided by Game Manager ___complete problem definition form	3-5

Assigned Tasks	Description of Task	Instructions Page
_____ (4)	Determining Extent and Severity of the Problem ___4.1 Submit a Request for a Planning Grant on the form provided Due Date:____________________ Maximum Grant $______________. ___4.2 Run File Search and/or Survey Maximum sample size:__________ Maximum number of variables____ (___independent; ___dependent) ___4.3 Analyze the data from 4.2 using appropriate statistical procedures ___4.4 Formal Problem Description (first draft). To be presented for critiquing by the other teams on (date)____________________	5-7
_____ (5)	Funds are available for identifying a Pool of Research Subjects for Treatments ___Yes; ___No	7
_____ (6)	Empirical Evaluation of the Education Treatments ___6.1 Submit a Research Proposal to the Game Manager. The proposal must meet these restrictions and requirements: Maximum number of variables per observation: Dependent_____; Independent_____; Total_____ Maximum number of observation times_____ Maximum number of research subjects _____ Date proposal must be submitted_____ The maximum project budget is: $_____ The proposal should contain each item checked below: ___(a) abstract of the proposal ___(b) introduction and overview of problem	7-9

Assigned Tasks | Description of Task | Instructions Page

___(c) a review of the related literature from:
  ___the Information Bank only
  ___both the Information Bank and library
___(d) a formal statement of the problem
___(e) a description of the procedures to be used
___(f) a schedule of activities
___(g) an itemized budget

The writing style for the proposal is checked below:

___(a) brief outline
___(b) detailed outline
___(c) formal narrative

___6.2 Using an appropriate method, divide your sample into treatment groups, observing the restrictions given in Task 3. Run the experiment on the FEHR Data Generator. Data will be output on:

___(a) printed copy only
___(b) printed copy and punch cards
___(c) printed copy and the team's computer file

___6.3 Analyze and interpret the data from Step 6.2 using appropriate statistical procedures. Record restrictions (to be announced by the Game Manager) below:

____

____

___6.4 Submit a final report to the Game Manager. The report should contain the proposal items checked in 6.1 plus the items checked below:

___(h) the results of the field test
___(i) a summary of the statistical findings
___(j) a discussion of results culminating in an educational decision
___(k) a discussion of the limitations of the project

Assigned Tasks	Description of Task	Instructions Page
	___(l) recommendations for future research ___(m) an appendix containing the log(s) of activities The writing style of the final report should be: ___(a) brief outline ___(b) detailed outline ___(c) formal narrative Final report due date:_____________	
_____ (7)	Attend a Consolidation Session (at a time to be announced by the Game Manager) to discuss the strengths and weaknesses of the strategies employed by your team, and any other teams which are attacking the same problem	9

APPENDICES
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APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 7
REMEDIAL ARITHMETIC IN THE JUNIOR COLLEGE

1. References Directly Related To This Problem.

Carman, Robert A. A Systems Approach to the Development of Junior College Course in Remedial Mathematics (ERIC), August, 1969.

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APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 7
REMEDIAL ARITHMETIC IN THE JUNIOR COLLEGE

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APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 7
REMEDIAL ARITHMETIC IN THE JUNIOR COLLEGE

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RESEARCH POPULATION: APPENDIX II

The research population for the Remedial Mathematics Assessment problem consists of all students who have registered for Mathematics 99 at Fair City Community College for the fall term of this year. Each of these students has an ID consisting of three sections. The first section from the left, the first two digits, identify Fair City. The second section, the next two digits, indicate the census tract from which a student comes, and the last three digits identify the individual person. For example, 01-13-004 identifies the fourth person from the 13th subunit (census tract 112) in Fair City. The hyphens are used for clarity only. When entering this ID number into the computer one would eliminate the hyphens and type 0112004. If you want to measure all the students in a census tract, enter zeroes in the spot for the individual person digits. For example, 0112000 would provide the variable scores for all students in Fair City's census tract number 111 who are registered for this class. This number is entered into the computer as one ID. So when you enter this ID in the computer, it represents one of the ID's allotted to a line but you receive the results for that whole class. There are 251 separate student ID's in the research population for this problem, as illustrated in the table below.

UNIT INDEX FOR ALL OF FAIR CITY	CENSUS TRACTS	SUBUNITS	REGISTRATION ENROLLMENT IN MATH 99	STUDENT ID'S AVAILABLE FOR JUNIOR COLLEGE
01	100=	01	10	01-01-001 to 01-01-010
01	101=	02	16	01-02-001 to 01-02-016
01	102=	03	18	01-03-001 to 01-03-018
01	103=	04	3	01-04-001 to 01-04-003
01	104=	05	6	01-05-001 to 01-05-006
01	105=	06	7	01-06-001 to 01-06-007
01	106=	07	8	01-07-001 to 01-07-008
01	107=	08	3	01-08-001 to 01-08-003
01	108=	09	3	01-09-001 to 01-09-003
01	119=	10	3	01-10-001 to 01-10-003
01	110=	11	7	01-11-001 to 01-11-007
01	111=	12	8	01-12-001 to 01-12-008
01	112=	13	9	01-13-001 to 01-13-009
01	113=	14	3	01-14-001 to 01-14-003
01	114=	15	2	01-15-001 to 01-15-002
01	115=	16	2	01-16-001 to 01-16-002
01	116=	17	4	01-17-001 to 01-17-004
01	117=	18	4	01-18-001 to 01-18-004
01	118=	19	18	01-19-001 to 01-19-018
01	119=	20	15	01-20-001 to 01-20-015
01	120=	21	12	01-21-001 to 01-21-012
01	121=	22	8	01-22-001 to 01-22-008
01	122=	23	11	01-23-001 to 01-23-011
01	123=	24	9	01-24-001 to 01-24-009
01	124=	25	5	01-25-001 to 01-25-005
01	125=	26	3	01-26-001 to 01-26-003

CATALOG OF TREATMENTS: APPENDIX III

TREATMENT INDEX	TREATMENT NAME	TREATMENT DESCRIPTION	FIXED OVERHEAD COST OF SETTING UP PROGRAM	FIXED COST PER PUPIL ENTERING PROGRAM	WEEKLY MAINTENANCE COST FOR PROGRAM	WEEKLY COSTS PER STUDENT
01	Remedial Math for Adults	Basic Review of Arithmetic	$.00	$.00	$.00	$.00

Treatment Times. The time units in this problem are months. Time 00 represents the first day of class, time 01 the end of the first month and so on. Treatments may be administered for any number of months from 00 to 03 inclusive.

Observation or Testing Times. This refers to the time variables which may be measured during a treatment. The observation times in this problem are 00, 01, 02, 03.

Note: The costs listed above do not include per/person test costs, although those costs will be included in the assessed charge when tests are given during treatments. (See Catalog of Variables for these costs.) There are no other overhead costs for administering tests during treatments.

CATALOG OF VARIABLES: APPENDIX IV

TABLE OF CONTENTS

Types of Variables

I. ABILITY AND INTELLIGENCE VARIABLES
II. ACHIEVEMENT VARIABLES
III. READING ACHIEVEMENT AND READINESS VARIABLES
IV. PERSONALITY VARIABLES
V. PERSONAL HISTORY VARIABLES
VI. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS
VII. COURSE DESCRIPTION VARIABLES

Note 1: The category, AVAILABLE ON: FILE SURV TREAT, identifies the process by which each individual variable can be retrieved. That is, if there is a "YES" under FILE, the variable can be retrieved via a File Search. If there is a "YES" under SURV, the variable can be measured via a survey. If there is a "YES" under TREAT, the variable can be measured during a treatment.

Note 2: The category, PRICE/PERSON, indicates costs of variable scores measured via survey and during treatment ONLY. If the variable is retrieved via File Search, the cost/variable/person is ALWAYS 5¢.

Note 3: Unless otherwise stated, assume that all data in the files were collected during registration before classes started.

Note 4: Assume that all survey data is collected at time 00, which is the first day of classes. Likewise, all data collected during a treatment at time 00 would be for the first day of classes.

LIST OF COSTS THAT MAY BE INCURRED IN THIS PROBLEM

File Search

1. Fixed overhead charge for initiating a search	$20.00
2. Overhead costs of entering sub-unit files	$ 5.00/sub-unit
3. Overhead costs of entering units	$ 0.00/unit
4. Cost of variable scores	$ 0.05/variable/ person in all cases

Survey

1. Fixed overhead charge for initiating a search	$20.00
2. Overhead costs of administering tests to sub-units	$ 5.00/sub-unit
3. Overhead costs of entering units	$ 0.00/unit
4. Cost of variable scores	See Catalog of Variables

Secretary

1. Fixed overhead costs for initiating use of secretary	$10.00
2. Cost of secretary per student	$ 0.10

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 7

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
1. ABILITY AND INTELLIGENCE VARIABLES					
Otis Quick Scoring Ability Test (OTIS IQ) Numbers are SCALED SCORES.	24	NO	YES	YES	.25
Stanford-Binet (S-B) Numbers are SCALED SCORES.	25	NO	YES	YES	12.65
2. ACHIEVEMENT VARIABLES					
Stanford Achievement Test:Arithmetic Computation (SAT MATH COMP) Numbers are RAW SCORES.	17	NO	YES	YES	.30
Stanford Achievement Test:Arithmetic Concepts (SAT MATH CONC) Numbers are RAW SCORES.	18	NO	YES	YES	.30
Stanford Achievement Test:Math Application (SAT MATH APPL) Numbers are RAW SCORES.	19	NO	YES	YES	.30
Wide Range Achievement Test:Reading (WRAT READ) Numbers are RAW SCORES.	26	NO	YES	YES	1.75
Wide Range Achievement Test:Spelling (WRAT SPEL) Numbers are RAW SCORES.	27	NO	YES	YES	1.75
3. READING ACHIEVEMENT AND READINESS VARIABLES					
Gates Reading Survey:Level of Comprehension (GRS LEVL COMP) Numbers are RAW SCORES.	20	NO	YES	YES	.30
4. PERSONALITY VARIABLES					
Survey of Study Habits & Attitudes:Delay Avoidance (SSHA DELY AVOD) Numbers are RAW SCORES.	21	NO	YES	YES	.25
Survey of Study Habits & Attitudes:Work Methods (SSHA WORK METH) Numbers are RAW SCORES.	22	NO	YES	YES	.25
Survey of Study Habits & Attitudes:Educational Acceptance (SSHA ED ACCP) Numbers are RAW SCORES.	23	NO	YES	YES	.25

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 7

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
5. PERSONAL HISTORY VARIABLES					
Age (AGE)-(1=18-25 yrs., 2=26-33 yrs., 3=34-41 yrs., 4=42 yrs. & over)	1	YES	NO	NO	.05
Education (EDUC)-(1=Some Grade School, 2=Grade School Completed Thru 8th Grade, 3=Some High School, 4=High School Completed)	5	YES	NO	NO	.05
Marital Status (MRTL STAT)-(1=Single, 2=Married, 3=Divorced)	6	YES	NO	NO	.05
Number of Courses Now Enrolled for at FCC Besides Math 99 (#CRS THIS SEM)-(1=None, 2=1, 3=2, 4=3, 5=4 or More)	13	NO	YES	YES	.05
Number of Courses Previously Taken & Passed at FCC (#CRS PREV FCC)-(1=None, 2=1 or 2, 3=3 or 4, 4=5 or 6, 5=7 or More)	12	NO	YES	YES	.05
Number of Previous Math Courses at the High School Level, Including Basic Math, Geometry, Statistics, Algebra I, II, Calculus (#CRS IN MATH)-(1=0, 2=1, 3=2, 4=3, 5=4 or More)	14	NO	YES	YES	.15
Occupation (JOB)-(1=Unemployed (looking for work), 2=Part-Time Working, 3=Full-Time Unskilled Work, 4=Full-Time Skilled Work, 5=Not Working by Choice (i.e., Full-Time Housewife, etc.))	4	YES	NO	NO	.05
Race (RACE)-(1=White, 2=Non-White)	2	YES	NO	NO	.05
Sex (SEX)-(1=Female, 2=Male)	3	YES	NO	NO	.05
6. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS					
Arithmetic is Difficult for Me (DIFF OF MATH)-(1=Strongly Agree, 2=Agree, 3=Disagree, 4=Strongly Disagree)	9	NO	YES	YES	.15

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 7

VARIABLE DESCRIPTION	VARIABLE INDEX	AVAILABILITY ON FILE	AVAILABILITY ON SURV	AVAILABILITY ON TREAT	PRICE/ PERSON
Attitude Toward Formal Education (ATT TO ED)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	8	NO	YES	YES	.15
Math 99 Will Be (Has Been) Helpful to Me (HELP MATH 99)-(1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly gree),	10	NO	YES	YES	.15
Reason for Taking Math 99 (WHY MATH 99)-(1=I Just Wanted to Take This Course for My Own Needs, 2=Required by my Occupational Program at PCC, 3=My Job Requires this as Part of In-Service Training, 4=Required for My 4-Year College Preparatory Program)	11	YES	NO	NO	.15
7. COURSE DESCRIPTION VARIABLES					
Number of Weeks in Math 99 (#WKS MATH 99)-(1=0-4, 2=5-8, 3=9-12, 4=13-16)	15	NO	NO	YES	.15
Success in Math 99 (SUCC MATH 99)-(1=No Unit Completed, 2=1 Unit Completed, 3=2 Units Completed, 4=3 Units Completed, 5=All Units Completed)	16	NO	NO	YES	.15

APPENDIX V

COURSE DESCRIPTION
REMEDIAL MATHEMATICS FOR ADULTS

The present Remedial Mathematics for Adults course was developed several years ago by the Community College's Administration and Faculty in response to a growing number of requests from all sectors of the institution for a course in basic arithmetic. The following is a description of the course designed to meet this need.

Purpose:

This course is designed to provide basic skills in arithmetic to people with a wide range of experiences. For this reason it is designed to be as individually flexible as possible. When people complete this course they should have the necessary basic skills to perform at the college level no matter what their previous background may have been.

Method of Presentation:

Each student receives a self-explanatory programmed workbook, which contains four units and proceeds at his own rate. There are no formal classes. Each student is assigned to an instructor who provides one-to-one attention as the student requires. The instructors also provide immediate feedback by correcting exams on the spot.

Types of Skills Taught:

The program consists of four units: (1) whole numbers, (2) fractions, (3) decimals, and (4) percentages. Each unit teaches the student how to manipulate the numbers in (a) addition, (b) subtraction, (c) multiplication, and (d) division.

Time:

The course is designed to take a person between 1 and 16 weeks to complete, depending on his time and ability.

Testing Procedure:

Each of the four units consists of 30 sections. When a student is able to solve the problems at the end of each section (the answers are in the back of the workbook) he goes on to the next section. There is a short exam after each unit which is corrected by the instructor.

UNIT INDEX FOR ALL OF FAIR CITY	CENSUS TRACTS	SUBUNITS	REGISTRATION ENROLLMENT IN MATH 99	STUDENT ID'S AVAILABLE FOR JUNIOR COLLEGE
01	126=	27	4	01-27-001 to 01-27-004
01	127=	28	3	01-28-001 to 01-28-003
01	128=	29	2	01-29-001 to 01-29-002
01	129=	30	5	01-30-001 to 01-30-005
01	130=	31	12	01-31-001 to 01-31-012
01	131=	32	7	01-32-001 to 01-32-007
01	132=	33	4	01-33-001 to 01-33-004
01	133=	34	2	01-34-001 to 01-34-002
01	134=	35	3	01-35-001 to 01-35-003
01	135=	36	2	01-36-001 to 01-36-002
01	136=	37	3	01-37-001 to 01-37-003
01	137=	38	7	01-38-001 to 01-38-007

FEHR - PRACTICUM

Request For Proposals

For

BUSING TO ACHIEVE INTEGRATION (BUS)

RFP008

©

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CONTRACT NO'S. OEC-0-70-4773(520)
OEG-0-72--529

LEVERNE S. COLLET
4215A SCHOOL OF EDUCATION BUILDING
UNIVERSITY OF MICHIGAN

FEHR-PRACTICUM REQUEST FOR PROPOSALS (RFP)
RFP008:BUSING

The Fair City Board of Education is soliciting proposals for the evaluation of the integration through busing plan to be instituted in Fair City this coming fall. Specific details of the content to be investigated are given in the attached problem description.

In general, projects will be funded in two separate phases. In phase I, a team is awarded a planning grant which will enable them to explore the extent and severity of the problem and to develop a proposal for an experimental study of the effects of the two available remedial programs as compared to present classroom practice. When an adequate proposal has been developed, the team will then be funded for phase II, in which they actually carry out the proposed research. A detailed description of the specific form and contents of the request for a planning grant and the research proposal are given in the Players' Instructions. In either case, the level of funding is subject to negotiation with the game manager.

A detailed description of the tasks involved in each phase of the project is provided in the INSTRUCTIONS section of the FEHR-PRACTICUM Players' Handbook. However, the time available and the needs of the players involved in a particular game vary from location to location. For that reason, the projects which may be funded under this RFP will vary widely in their scope, complexity, and degree of sophistication. The level of complexity expected from your team for this particular problem is specified in the itemized list of the work to be accomplished which appears later in this document.

The remainder of this RFP document is organized into three sections. The first section, entitled Problem Description, provides an overview of the problem, and describes the particular treatments (programs), research subjects, and variables which may be used in your study. In addition, it provides specific references to various sources of additional information. The second section provides a detailed list of the tasks to be performed by your team. The third section is a set of appendices providing detailed data on the various components described in section I. A table of contents appears at the beginning of this section.

PROBLEM DESCRIPTION: BUSING

The Problem: In Fair City, as in many other American cities, there exists a housing pattern which results in the schools being racially segregated. The courts of this country have resolved that the concern for equality and the country's best interest necessitates taking deliberate action to avoid replicating the housing pattern in the schools. Fair City desires to comply with the intent of the courts, and plans to achieve the racial proportions which exist in the city as a whole, 65% white and 35% non-white, in each school through busing. This fall, the Board of Education plans to integrate the elementary grades. The Board is fully aware that the busing issue is very controversial and that it rouses people's anxieties for a multitude of reasons. The Board hopes, however, that a comprehensive evaluation will allay these fears by providing evidence that the plan is both educationally and socially advantageous.

The Board has looked closely at the busing plans and research of other cities as well as the peculiarities of Fair City itself. To most effeciently achieve integration through busing, and for other reasons (both educational and political), the Board has decided to convert the traditional (K to 6) elementary schools into primary schools (K to 3) and intermediate schools (4 to 6). All elementary schools located in predominantly-white areas will become primary schools, and those located in predominantly-black areas will become intermediate schools. All children in the primary age group in the predominantly-black area, and all children in the intermediate age group in the predominantly-white area are bused to school. No child will have to ride the bus for more than 20 minutes. (Details of the busing plan are available in Appendix V).

The Board of Education would like to be able to show the people of Fair City that the busing plan is valuable, or, at least, that it is not detrimental. Secondly, they would like to identify any problem areas, so they can take remedial action. Consequently, your proposed research should indicate how the positive and negative effects of integration will be identified.

The Research Population: For this problem your research population will be grades one and four of all 21 elementary schools. These grades have been chosen because it is only these students who will be in the same school for three years. (It should be assumed that the file searches and surveys will be done in the first week of this fall semester.)

Available Variables: In this problem there are 52 dependent and independent variables. In addition to the usual achievement scores and personal information such as sex or age, there are variables which measure the attitude of the student, his/her parent and his/her teacher toward school busing. A detailed list of the available variables appears in Appendix II.

Catalog of Treatments: There is only one treatment in this problem, the Integration Through Busing Plan. (See Appendix III).

Previous Research: Reports of previous studies in this area are available in the Information Bank. See Appendix I for a list of titles.

CHECKLIST OF TASKS TO BE PERFORMED

Since the work to be accomplished under this RFP varies from location to location, your Game Manager has placed a ( ) before the particular items for which your team is responsible in the PRACTICUM. (If no items are checked, see your Game Manager before proceeding.) A detailed explanation of how to accomplish each task appears in the Instructions section on the page indicated at right. Tasks marked with an asterisk (*) are mandatory in every PRACTICUM. Before beginning, each player should study, interrelate, and synthesize the information contained in the RFP, its various appendices, and the relevant parts of the Fair City Booklet.

Assigned Tasks		Description of Task	Instructions Page
*	(1)	Each player should submit an Orientation Questionnaire to the Game Manager. The specific question to be answered are in the INSTRUCTIONS.	1
*	(2)	Form teams as directed by the Game Manager. The following assignments and requirements apply throughout this PRACTICUM: Team salary: $_____ per day. Costs are to be paid as indicated below: ___(a) ignore all costs ___(b) **pay** costs by check ___(c) pay costs with computer receipts Requests for file searches, survey and treatments should be: ___(a) entered by the team via PROMPTS ___(b) entered by the team via punch cards ___(c) written on the appropriate form and submitted to the Game Manager A Log of research activities: ___(a) to be kept by each player ___(b) to be kept by each team ___(c) no long necessary	1
*	(3)	Operationalize the problem observing the following restrictions: Literature: ___no review necessary ___Information Bank only ___Information Bank and regular library Definition: ___Problem definition provided by Game Manager ___complete problem definition form	3-5

Assigned Tasks		Description of Task	Instructions Page
_____	(4)	Determining Extent and Severity of the Problem	5-7

___4.1 Submit a Request for a Planning Grant on the form provided

Due Date:______________________

Maximum Grant $________________

___4.2 Run File Search and/or Survey

Maximum sample size:___________

Maximum number of variables____

(___independent; ___dependent)

___4.3 Analyze the data from 4.2 using appropriate statistical procedures

___4.4 Formal Problem Description (first draft). To be presented for critiquing by the other teams on (date)________________________

Assigned Tasks		Description of Task	Instructions Page
_____	(5)	Funds are available for identifying a Pool of Research Subjects for Treatments	7

___Yes; ___No

Assigned Tasks		Description of Task	Instructions Page
_____	(6)	Empirical Evaluation of the Education Treatments	7-9

___6.1 Submit a Research Proposal to the Game Manager. The proposal must meet these restrictions and requirements:

Maximum number of variables per observation:

Dependent_____; Independent_____;

Total_____

Maximum number of observation times_____

Maximum number of research subjects _____

Date proposal must be submitted_____

The maximum project budget is: $_____

The proposal should contain each item checked below:

___(a) abstract of the proposal

___(b) introduction and overview of problem

Assigned Tasks	Description of Task	Instructions Page

___(c) a review of the related literature from:
  ___the Information Bank only
  ___both the Information Bank and library
___(d) a formal statement of the problem
___(e) a description of the procedures to be used
___(f) a schedule of activities
___(g) an itemized budget

The writing style for the proposal is checked below:

___(a) brief outline
___(b) detailed outline
___(c) formal narrative

___6.2 Using an appropriate method, divide your sample into treatment groups, observing the restrictions given in Task 3. Run the experiment on the FEHR Data Generator. Data will be output on:

___(a) printed copy only
___(b) printed copy and punch cards
___(c) printed copy and the team's computer file

___6.3 Analyze and interpret the data from Step 6.2 using appropriate statistical procedures. Record restrictions (to be announced by the Game Manager) below:

____

____

___6.4 Submit a final report to the Game Manager. The report should contain the proposal items checked in 6.1 plus the items checked below:

___(h) the results of the field test
___(i) a summary of the statistical findings
___(j) a discussion of results culminating in an educational decision
___(k) a discussion of the limitations of the project

Assigned Tasks	Description of Task	Instructions Page
	___(l) recommendations for future research ___(m) an appendix containing the log(s) of activities The writing style of the final report should be: ___(a) brief outline ___(b) detailed outline ___(c) formal narrative Final report due date:___________	
_____ (7)	Attend a Consolidation Session (at a time to be announced by the Game Manager) to discuss the strengths and weaknesses of the strategies employed by your team, and any other teams which are attacking the same problem	9

APPENDICES
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APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 8
BUSING

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APPENDIX I
CATEGORIZED LIST OF INFORMATION BANK MATERIALS FOR PROBLEM 8
BUSING

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Stanford Achievement Tests.

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THE RESEARCH POPULATION: APPENDIX II

The research population for this problem consists of the first and fourth grade students in the Fair City Elementary Schools. Each of these students has an I.D. number consisting of three sections. The first two digits from the left indicate the school in which the student is currently enrolled, the next two digits refer to the school the student attended prior to the implementation of the busing program, and the last three digits identify the individual student. For example, 05-07-030 means that student 30 currently enrolled in H.D. Dock Elementary School (05), attended Lamb Elementary School prior to the busing programme. The hyphens are for clarity only. When entering this student's ID into the computer, one would eliminate the hyphens and type 0507030. If you wanted to measure all the students who previously attended Lamb Elementary and are now being bused to Dock Elementary, enter zeroes for the individual student digits. For example, 0507000 would provide the variable scores for all students who used to attend Lamb and are now being bused to Dock. This is entered into the computer as one ID. When you enter this ID into the computer it represents one of the ID's allotted to a line, but you receive the results for the whole group. There are 3633 separate student ID's in the research population for this problem. They are listed below.

SCHOOL	PRESENT SCHOOL OR UNIT INDEX	GRADE	FORMER SCHOOL OR SUBUNIT INDEX	GROUP ENROLL.	STUDENT ID'S AVAILABLE IN THE CLASS
L.J. Horner	01	4	01	60	01-01-001 to 01-01-060
			02	17	01-02-001 to 01-02-017
			06	46	01-06-001 to 01-06-046
			09	32	01-09-001 to 01-09-032
P.P. Pumpkineater	02	4	02	144	02-02-001 to 02-02-144
			03	90	02-02-001 to 02-03-090
			06	45	02-06-001 to 02-06-045
			08	20	02-08-001 to 02-08-020
Knaveofhearts	03	1	01	32	03-01-001 to 03-01-032
			02	42	03-02-001 to 03-02-042
			06	68	03-06-001 to 03-06-068
Jackandjill	04	4	04	117	04-04-001 to 04-04-117
			05	92	04-05-001 to 04-05-092
			06	7	04-06-001 to 04-06-007
			07	83	04-07-001 to 04-07-083
			10	46	04-10-001 to 04-10-046
H.D. Dock	05	1	04	41	05-04-001 to 05-04-041
			05	10	05-05-001 to 05-05-010
			06	7	05-06-001 to 05-06-007
			07	34	05-07-001 to 05-07-034
			10	34	05-10-001 to 05-10-034

SCHOOL	PRESENT SCHOOL OR UNIT INDEX	GRADE	FORMER SCHOOL OR SUBUNIT INDEX	GROUP ENROLL.	STUDENT ID'S AVAILABLE IN THE CLASS
M. Goose	06	1	02	50	06-02-001 to 06-02-050
			03	37	06-03-001 to 06-03-037
			06	23	06-06-001 to 06-06-023
			08	21	06-08-001 to 06-08-021
Lamb	07	1	04	60	07-04-001 to 07-04-060
			05	81	07-05-001 to 07-05-081
			07	38	07-07-001 to 07-07-038
Muffet	08	1	03	44	08-03-001 to 08-03-001
			09	40	08-09-001 to 08-09-040
J. Sprat	09	1	09	36	09-09-001 to 09-09-036
			16	72	09-16-001 to 09-16-072
			19	15	09-19-001 to 09-19-015
Calicocat	10	1	10	66	10-10-001 to 10-10-066
			14	58	10-14-001 to 10-14-058
			18	83	10-18-001 to 10-18-083
T. Blindmice	11	1	07	32	11-07-001 to 11-07-032
			11	41	11-11-001 to 11-11-04[illegible]
			13	50	11-13-001 to 11-13-05[illegible]
			17	57	11-17-001 to 11-17-057
H.D. Diddle	12	1	11	51	12-11-001 to 12-11-051
			12	64	12-12-001 to 12-12-064
			13	35	12-13-001 to 12-13-035
O.K. Cole	13	4	07	32	13-07-001 to 13-07-032
			10	40	13-10-001 to 13-10-040
			11	46	13-11-001 to 13-11-046
			12	142	13-12-001 to 13-12-142
			13	40	13-13-001 to 13-13-040
Shaftoe	14	1	08	48	14-08-001 to 14-08-048
			14	57	14-14-001 to 14-14-057
			16	24	14-16-001 to 14-16-024
			20	65	14-20-001 to 14-20-065
M.M. Contrary	15	1	15	52	15-15-001 to 15-15-052
			19	32	15-19-001 to 15-19-032
Inashoe	16	4	16	97	16-16-001 to 16-16-097
			19	10	16-19-001 to 16-19-010

SCHOOL	PRESENT SCHOOL OR UNIT INDEX	GRADE	FORMER SCHOOL OR SUBUNIT INDEX	GROUP ENROLL.	STUDENT ID'S AVAILABLE IN THE CLASS
S. Simon	17	4	11	67	17-11-001 to 17-11-067
			12	80	17-12-001 to 17-12-080
			17	131	17-17-001 to 17-17-131
Hubbard	18	4	10	48	18-10-001 to 18-10-048
			14	57	18-14-001 to 18-14-057
			18	71	18-18-001 to 18-18-071
			19	20	18-19-001 to 18-19-020
			21	37	18-21-001 to 18-21-037
Sixpence	19	4	08	49	19-08-001 to 19-08-049
			14	59	19-14-001 to 19-14-059
			19	24	19-19-001 to 19-19-024
B.B.B. Sheep	20	4	09	27	20-09-001 to 20-09-027
			15	50	20-15-001 to 20-15-050
			20	52	20-20-001 to 20-20-052
L.B. Blue	21	1	19	19	21-19-001 to 21-19-19
			21	36	21-21-001 to 21-21-036

CATALOG OF TREATMENTS: APPENDIX III

TREATMENT INDEX	TREATMENT NAME	TREATMENT DESCRIPTION	FIXED OVERHEAD COST OF SETTING UP PROGRAM	FIXED OVERHEAD PER PUPIL ENTERING THE PROGRAM	YEARLY COST FOR MAINTAINING THE PROGRAM	YEARLY COST FOR MAINTAINING EACH STUDENT
01	Integration Through Busing	Students get bused as is necessary to achieve integration	$0.00	$0.00	$0.00	$0.00

Treatment Times. The time units in this problem are years. Time 00 represents the first day of class. Time 01 represents the end of the first year. Treatments may be administered for any number of years from 00 to 03, inclusive.

Observation or Testing Time. This refers to the time at which variables are observed during a treatment. The observation times for this problem are 00, 01, 02, 03. Illustrated in the chart below are the time sequences in this problem. It may be wise to check the chart when picking variables. For it may happen that variables available at time 00 for a particular class will not, for example, be available at time 02, or vice versa.

	Time 00	Time 01	Time 02	Time 03
First grade	First day of classes.	End of first grade.	End of second grade.	End of third grade.
Fourth grade	First day of classes.	End of fourth grade.	End of fifth grade.	End of sixth grade.

Note: The costs listed above do not include per/person test costs, although those costs will be included in the assessed charge when tests are given during treatments. (See Catalog of Variables for these costs.) There are no other overhead costs for administering tests during treatments.

CATALOG OF VARIABLES: APPENDIX IV

TABLE OF CONTENTS

Types of Variables

I. ACHIEVEMENT VARIABLES
II. INTELLIGENCE AND ABILITY
III. READING AND READING READINESS VARIABLES
IV. PERSONALITY VARIABLES
V. PERSONAL HISTORY VARIABLES
VI. ATTITUDE AND PERCEPTIONS
VII. TEACHER EDUCATION OF STUDENT VARIABLES

Note 1: The category, GRADE AVAILABLE, indicates at which grade level the test can be administered.

Note 2: The category, AVAILABLE ON: FILE SURV TREAT, identifies the process by which each individual variable can be retrieved. That is, if there is a "YES" under FILE, the variable can be retrieved via a File Search. If there is a "YES" under SURV, the variable can be measured via a survey. If there is a "YES" under TREAT, the variable can be measured during a treatment.

Note 3: The category, PRICE/PERSON, indicates costs of variable scores measured via survey and during treatment ONLY. If the variable is retrieved via File Search, the cost/variable/person is ALWAYS 5¢.

Note 4: Unless otherwise stated, assume that all scores in the files were obtained from tests administered during orientation before the first day of classes.

Note 5: Assume that all survey data is collected at time 0, which is the first day of classes. Likewise, all data collected at time 0 during a treatment is for the first day of classes.

COSTS THAT MAY BE INCURRED DURING THE DESCRIPTIVE PHASE OF BUSING

File Search

1.	Fixed overhead charge for initiating a search	$20.00
2.	Overhead costs of entering units	$10.00/unit
3.	Overhead costs of entering sub-unit files	$ 5.00/sub-unit
4.	Cost of variable scores	$ 0.05/variable/ person in all cases

Survey

1.	Fixed overhead charge for initiating a survey	$20.00
2.	Overhead costs of entering units	$10.00/unit
3.	Overhead costs of administering tests to sub-units	$ 5.00/sub-unit
4.	Cost of variable scores	See Catalog of Variables

Secretary

1.	Fixed overhead costs for initiating use of secretary	$10.00
2.	Cost of secretary per student	$ 0.10

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 8

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
1. ABILITY AND INTELLIGENCE VARIABLES						
California Test of Mental Maturity:Verbal I.Q. (CTMM VRBL IQ) Numbers are SCALED SCORES.	1-6	34	YES	YES	YES	.20
California Test of Mental Maturity:Non-Verbal I.Q. (CTMM NON- VRBL) Numbers are SCALED SCORES.	1-6	35	YES	YES	YES	.20
Stanford-Binet (S-B) Numbers are SCALED SCORES.	1-6	36	NO	YES	YES	12.65
2. ACHIEVEMENT VARIABLES						
Stanford Achievement Test:Paragraph Meaning (SAT PARA MEAN) Numbers are RAW SCORES.	1-6	28	YES	YES	YES	.30
Stanford Achievement Test:Spelling (SAT SPEL) Numbers are RAW SCORES.	1-6	29	YES	YES	YES	.30
Stanford Achievement Test:Word Meaning (SAT WORD MEAN) Numbers are RAW SCORES.	1-6	27	YES	YES	YES	.30
Stanford Achievement Test:Arithmetic Computation (SAT MATH COMP) Numbers are RAW SCORES.	2-6	30	YES	YES	YES	.30
Stanford Achievement Test:Arithmetic Concepts (SAT MATH CONC) Numbers are RAW SCORES.	1-6	31	YES	YES	YES	.30
Stanford Achievement Test:Social Studies (SAT SOCL STUD) Numbers are RAW SCORES.	4-6	33	YES	YES	YES	.30
Stanford Achievement Test:Science (SAT SCI) NUMBERS ARE RAW SCORES.	4-6	32	YES	YES	YES	.30
3. READING ACHIEVEMENT AND READINESS VARIABLES						
Gates-MacGinitie Reading Tests:Vocabulary (GATE MACG VCAB) Numbers are RAW SCORES.	1-6	49	NO	YES	YES	.10

APPE IX IV
CATALOG OF VARIABLES FOR PROBLEM 8

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	AVAILABILITY ON SURV	AVAILABILITY ON TREAT	PRICE/ PERSON
Gates-MacGinitie Reading Tests:Comprehension (GATE MACG COMP) Numbers are RAW SCORES.	1-6	50	NO	YES	YES	.10
Gates-MacGinitie Reading Tests:Speed (GATE MACG SPED) Numbers are RAW SCORES.	3-6	51	NO	YES	YES	.10
Gates-MacGinitie Reading Tests:Accuracy (GATE MACG RITE) Numbers are RAW SCORES.	3-6	52	NO	YES	YES	.10
4. PERSONALITY VARIABLES						
California Test of Personality:Self Reliance (CTP SELF RELY) Numbers are SCALED SCORES.	1-6	37	NO	YES	YES	.05
California Test of Personality:Sense of Personal Worth (CTP SELF WRTH) Numbers are SCALED SCORES.	1-6	38	NO	YES	YES	.05
California Test of Personality:Sense of Personal Freedom (CTP SELF FREE) Numbers are SCALED SCORES.	1-6	39	NO	YES	YES	.05
California Test of Personality:Feeling of Belonging (CTP FEEL BLNG) Numbers are SCALED SCORES.	1-6	40	NO	YES	YES	.05
California Test of Personality:Freedom From Withdrawing Tendencies (CTP WITH DRAW) Numbers are SCALED SCORES.	1-6	41	NO	YES	YES	.05
California Test of Personality:Freedom From Nervous Symptoms (CTP NRVS SYMP) Numbers are SCALED SCORES.	1-6	42	NO	YES	YES	.05
California Test of Personality:Social Standards (CTP SOCL NORM) Numbers are SCALED SCORES.	1-6	43	NO	YES	YES	.05
California Test of Personality:Social Skills (CTP SOCL SKIL) Numbers are SCALED SCORES.	1-6	44	NO	YES	YES	.05
California Test of Personality:Freedom From Anti-Social Tendencies (CTP ANTI SOCL) Numbers are SCALED SCORES.	1-6	45	NO	YES	YES	.05

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 8

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
California Test of Personality:Family Relations (CTP FMLY RLTN) Numbers are SCALED SCORES.	1-6	46	NO	YES	YES	.05
California Test of Personality:School Relations (CTP SCHL RLTN) Numbers are SCALED SCORES.	1-6	47	NO	YES	YES	.05
California Test of Personality:Community Relations (CTP TOWN RLTN) Numbers are SCALED SCORES.	1-6	48	NO	YES	YES	.05
5. PERSONAL HISTORY VARIABLES						
Age (AGE)-(1=5 yrs., 2=6 yrs., 3=7 yrs., 4=8 yrs., 5=9 yrs., 6=10 yrs.)	1,4	1	YES	NO	NO	
Family Marital Situation (FMLY MRTL SITN)-(1=Both Parents Present, 2=Divorced, 3=Mother Deceased, 4=Father Deceased, 5=Step-Parent Present)	1-6	6	NO	YES	YES	.30
Family Mobility (FMLY MOBL)-(1=Moved During Previous Year, 2=Moved During Previous 9 Years, 3=Moved During Previous 10+ Years)	1-6	25	NO	YES	YES	.35
Father's Education (DADS EDUC)-(1=0-8 yrs., 2=9-11 yrs., 3=12 yrs., 4=13-15 yrs., 5=16+ yrs.)	1-6	23	NO	YES	YES	.35
Father's Occupation (DADS WORK)-(1=Unemployed, 2=Unskilled Labor, 3=Skilled Labor, 4=Managerial, 5=Professional/Technical)	1-6	21	YES	YES	YES	.35
Health (HLTH)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	7	YES	YES	YES	.30
Hearing (HEARING)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	9	YES	YES	YES	.35
Mother's Education (MOMS EDUC)-(1=0-8 yrs., 2=9-11 yrs., 3=12 yrs., 4=13-15 yrs., 5=16+ yrs.)	1-6	24	NO	YES	YES	.35

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 8

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
Mother's Occupation (MOMS WORK)-(1=Unemployed, 2=Employed)	1-6	22	YES	YES	YES	.35
Race (RACE)-(1=White, 2=Non-White)	1-6	2	YES	YES	YES	.10
Sex (SEX)-(1=Female, 2=Male)	1-6	3	YES	YES	YES	.10
Sibling Position (SPOT IN FMLY)-(1=Only Child, 2=Oldest of 2 Children, 3=Youngest of 2 Children, 4=Oldest of 3-5 Children, 5=Middle of 3-5 Children, 6=Youngest of 3-5 Children, 7=Oldest of 6+ Children, 8=Middle of 6+ Children, 9=Youngest of 6+ Children)	1-6	5	NO	YES	YES	.20
Socio-Economic Status (SES):Deutsch Index-(1=Very Low, 2=Low, 3=Middle, 4=Upper-Middle, 5=Upper)	1-6	4	NO	YES	YES	.40
Vision (VI- SION)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	8	YES	YES	YES	.35
6. QUESTIONNAIRE ITEMS: ATTITUDES AND PERCEPTIONS						
Parents' Attitude Toward School (PRNT FEEL SCHL)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	17	NO	YES	YES	.35
Parents Think Busing Is (PRNT FEEL BSNG)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	18	NO	YES	YES	.35
Student Thinks Busing Is (KID FEEL BSNG)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	16	NO	YES	YES	.30
Teacher Thinks Busing Is (TCHR FEEL BSNG)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	20	NO	YES	YES	.35
Teacher Thinks School Is (TCHR FEEL SCHL)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	19	NO	YES	YES	.35

APPENDIX IV
CATALOG OF VARIABLES FOR PROBLEM 8

VARIABLE DESCRIPTION	GRADES AVAILABLE	VARIABLE INDEX	AVAILABILITY ON FILE	SURV	TREAT	PRICE/ PERSON
7. TEACHER EVALUATION OF STUDENTS						
Attendance (ATTN DNCE). Average per cent of time present: (1=<85, 2=85-89, 3=90-94, 4=95-99, 5=>99)	1-6	10	NO	YES	YES	.15
Average Overall Grade (AVER GRDE)-(1=F, 2=D, 3=C, 4=B, 5=A)	2-6	26	YES	YES	YES	.05
Class Participation (INVL IN CLAS)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	13	NO	YES	YES	.30
Classroom Behavior (CON DUCT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	14	NO	YES	YES	.30
Distractability (DIST RACT BLTY) (1=very high, 2=high, 3=moderate, 4=low, 5=very low)	1-6	11	NO	YES	YES	.30
Hyperactivity (HYPR ACTV ITY) (1=very hyperactive, 2=hyperactive, 3=active, 4=somewhat active, 5=placid)	1-6	15	NO	YES	YES	.30
Peer Interaction (PEER INTR ACT)-(1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)	1-6	12	NO	YES	YES	.30

APPENDIX V

FAIR CITY INTEGRATION THROUGH BUSING PLAN

Note: This Integration plan was developed by the Integration Committee. This committee, created by the Fair City Board of Education, was composed of leading and responsible citizens from all major groups within the city as well as members representing the school system.

Introduction. The integration of the Fair City Elementary Schools has been accomplished by dividing the city into four expanded attendance zones, each with at least one 4-6 intermediate school and several K-3 primary schools. The establishment of the attendance zones provides for integrated education with a minimum of time and distance spent for busing. The zones are unequal in enrollment but approximate with reasonable accuracy for the black/white ratio of the city's population (see Appendix VI, p. 23, FAIR CITY booklet).

TABLE 1

ATTENDANCE ZONES FOR INTEGRATION THROUGH BUSING

		STUDENT POPULATION			
ZONE	CENSUS TRACTS	NON-WHITE	WHITE	TOTAL	% NON-WHITE
A	102-105,107-112	884	1368	2252	39.3%
B	100,101,106,113,114	1089	1690	2779	39.2%
C	117-125,130-132,136 Rural	1330	3375	4705	28.3%
D	115,116,126-129,133-135	891	1741	2632	33.8%
Total		4194	8174	12368	33.9%

The map attached indicates the geographical distribution of the attendance zones.

Before the busing plan was implemented in Fair City, approximately 9.6% of the children in the city between the ages of 5-11 years did not attend the public elementary schools. (See Appendix VII, p. 23, FAIR CITY BOOKLET.) The implementation of the busing program caused an additional 25 students to transfer to non-public schools, leaving 90.0% still in attendance at public schools.

The integration program resulted in some changes in the city's educational facilities. In general, several of the 4-6 intermediate schools were enlarged, both to accommodate increased enrollments and to implement the middle school concept in terms of expanded library resources, additional learning space, etc. In most cases, these schools were among the older buildings in the city (see Information Bank) and were in need of some rennovation in any event. The K-3 primary schools, on the other hand, were housed in newer buildings and generally had decreased enrollments under the busing plan. The additional room, in most cases, was utilized in the implementation of innovative educational programs.

Table 2 reflects the shifts in enrollment by zone, while Table 3 indicates specific changes in the enrollment of individual schools.

TABLE 2

EFFECTS OF BUSING ON OVERALL SCHOOL ENROLLMENT				
ZONE	CURRENT CAPACITY OF SCHOOLS IN ZONE	ACTUAL ENROLLMENT IN ZONE		
		K-3	4-6	TOTAL
A	2156	1224	1028	2252
B	2920	1424	1355	2779
C	4232	2289	2416	4705
D	3085	1560	1072	2632
TOTAL	12393	6497	5871	12368

TABLE 3

EFFECTS OF BUSING ON SPECIFIC SCHOOL ENROLLMENTS				
INDEX	SCHOOL NAME	PRESENT ENROLLMENT	NEW ENROLLMENT	COMMENTS
1	Horner	367	458	Received 1 portable from Jackandjill, 2 from Pumpkineater
2	Pumpkineater	808	897	Addition built, gave portables to Horner
3	Knaveofhearts	630	569	
4	Jackandjill	786	1028	Addition built, portable given to Horner
5	Dock	651	506	
6	Goose	660	522	
7	Lamb	719	718	
8	Muffet	455	333	
9	Sprat	457	475	New portable added
10	Calicocat	772	810	Portable received from Cole
11	Blindmice	666	651	
12	Diddle	621	618	
13	Cole	762	896	Addition built, portable given to Calicocat
14	Shaftoe	766	765	
15	Contrary	339	320	
16	Inashoe	662	318	
17	Simon	616	828	Addition built
18	Hubbard	554	692	Addition built
19	Sixpence	420	369	
20	Sheep	441	385	
21	Blue	241	210	
TOTAL		12393	12368	

For location of schools, see Appendix XI, p. 25 in FAIR CITY BOOKLET.

When the busing plan was designed, care was taken to have all of the students from the same census tract attend the same school. In only a few instances was it necessary to bus specifically by race or geographical distinctions within tracts. As much as possible, neighborhoods remained intact under the program.

On the whole, the elementary school population in Fair City was 33.9% non-white. The ratio in individual zones varied by no more than 6 percentage points on either side of the city average; in individual schools the variation may be 10 percentage points.

Table 4 gives specific information on the busing plan by zone.

TABLE 4

IMPLEMENTATION OF INTEGRATION THROUGH BUSING

	SCHOOL					STUDENT ENROLL.		
ZONE	INDEX	NAME	ATTENDANCE AREA	TYPE OF SCHOOL	% NON-WHITE	NON-WHITE	WHITE	TOTAL
A	4	Jackandjill	102-105,107-112 All 4-6 students in zone	4-6	38.7%	398	630	1028
	5	Dock	102,107,108,111, 112	K-3	36.9%	187	319	506
	7	Lamb	103-105,109,110	K-3	41.6%	299	419	718
B	1	Horner	100,114, southern 1/8 of 101, northeastern 1/2 of 106	4-6	39.5%	181	277	458
	2	Pumpkineater	113, northern 7/8 of 101, southwestern 1/2 of 106	4-6	43.9%	394	503	897
	3	Knaveofhearts	100, northern 1/4 of 101, northern 3/4 of 106	K-3	38.3%	218	351	569
	6	Goose	113, middle 1/2 of 101, southern 1/4 of 106	K-3	37.9%	198	342	522
	8	Muffet	114, southern 1/4 of 101	K-3	29.4%	98	235	333
C	13	Cole	118-120,123,124, black students from 122	4-6	32.3%	290	606	896
	17	Simon	121,131, white students from 122	4-6	25.4%	211	617	828
	18	Hubbard	117,125,130,132, 136,Rural	4-6	29.1%	202	490	692

TABLE 4 (cont.)

IMPLEMENTATION OF INTEGRATION THROUGH BUSING

SCHOOL						STUDENT ENROLL.		
ZONE	INDEX	NAME	ATTENDANCE AREA	TYPE OF SCHOOL	% NON-WHITE	NON-WHITE	WHITE	TOTAL
	10	Calicocat	117,118,125,130, 132	K-3	28.4%	230	580	810
	11	Blindmice	119,120,124,131	K-3	24.1%	157	494	651
	12	Diddle	121-123	K-3	27.3%	169	449	618
	21	Blue	136, Rural	K-3	37.6%	71	139	210
D	16	Inashoe	128,129,134	4-6	28.0%	89	229	318
	19	Sixpence	116,126,133	4-6	25.2%	93	276	369
	20	Sheep	115,127,135	4-6	41.3%	159	226	385
	9	Sprat	115,129,134	K-3	28.6%	136	339	475
	14	Shaftoe	116,126,128,135	K-3	38.6%	295	470	765
	15	Contrary	127,133	K-3	37.2%	119	201	320

To achieve an optimal student population in each school, a large proportion of the children spent some time on buses. However, in only two instances was the entire enrollment of a school changed. In fact, there were ten schools in which no child from certain grades needed to be bussed to another school to achieve integration. Table 5 indicates the percentage of students bussed from each school.

TABLE 5

STUDENTS BUSED UNDER INTEGRATION PLAN

		STUDENTS BUSSED IN		STUDENTS BUSSED OUT				
				TOTAL SCHOOL		GRADE LEVELS		
SCHOOL	INDEX	AMOUNT	PERCENT	AMOUNT	PERCENT	AMOUNT	PERCENT	LEVELS
L.J. Horner	01	279	60.9%	188	51.2%	0	0%	4-6
P.P. Pumpkineater	02	465	51.8%	376	46.6%	0	0%	4-6
Knaveofhearts	03	569	100%	630	100%	292	100%	K-3
Jackandjill	04	681	66.2%	439	55.9%	0	0%	4-6
H.D. Dock	05	465	91.9%	610	93.7%	331	89,0%	K-3
M. Goose	06	432	82.7%	570	86.3%	286	76.1%	K-3
Lamb	07	569	79.2%	570	79.3%	236	61.3%	K-3
Muffet	08	333	100%	455	100%	264	100%	K-3
J. Sprat	09	337	70.9%	319	69.8%	150	52%	K-3
Calicocat	10	553	68.3%	515	66.7%	125	32.7%	K-3
T. Blindmice	11	508	78%	523	78.5%	197	57.9%	K-3
H.D. Diddle	12	357	57.8%	360	60%	0	0%	K-3
O.K. Cole	13	777	86.7%	643	84.4%	307	72.1%	4-6
Shaftoe	14	541	70.7%	542	70.7%	215	49%	K-3
M.M. Contrary	15	120	37.5%	139	41.0%	0	0%	K-3
Inashoe	16	28	8.8%	372	56.2%	0	0%	4-6
S. Simon	17	437	52.8%	225	36.6%	0	0%	4-6

TABLE 5(cont.)

STUDENTS BUSSED UNDER INTEGRATION PLAN

		STUDENTS BUSED IN		STUDENTS BUSED OUT				
				TOTAL SCHOOL		GRADE LEVELS		
SCHOOL	INDEX	AMOUNT	PERCENT	AMOUNT	PERCENT	AMOUNT	PERCENT	LEVELS
Hubbard	18	479	69.2%	341	61.6%	0	0%	4-6
Sixpence	19	306	82.9%	357	85%	84	57.1%	4-6
B.B.B. Sheep	20	229	59.5%	285	64.6%	0	0%	4-6
L.B. Blue	21	71	33.8%	102	42.3%	0	0%	K-3
SUBTOTAL		8536		8561		2487		
Total Transfers Out:				25		25		
TOTAL		8536	69.0%	8536	69.0%	2462	19.9%	

Thus, while 69% of the elementary school students in Fair City ride buses to school as a result of the integration through bussing plan, only 20% of the students are bused from their former schools when they could still attend that school under the new K-3, 4-6 plan. The other 50% of the students are bused solely as a result of the K-3, 4-6 educational program.

In general, classes under the new K-3, 4-6 educational plan pupil/teacher ratios have decreased in the schools. Students have been assigned to classrooms randomly within each grade, thus assuring a mix in each room comparable to that of the entire school. Table 6 indicates the classroom situation in each facility.

TABLE 6

PUPIL/TEACHER RATIO UNDER INTEGRATION PLAN

SCHOOL	INDEX	GRADE	NUMBER OF STUDENTS	NUMBER OF CLASSROOMS	PUPIL/TEACHER RATIO
L.J. Horner	01	4	155	5	5(31)
		5	152	5	2(31),3(30)
		6	151	5	1(31),4(30)
P.P. Pumpkineater	02	4	299	10	1(29),9(30)
		5	299	10	1(29),9(30)
		6	299	10	1(29),9(30)
Knaveofhearts	03	K	144	6(3)	6(24)
		1	142	5	2(29),3(28)
		2	142	5	2(29),3(28)
		3	141	5	1(29),4(28)
Jackandjill	04	4	345	11	7(31),4(32)
		5	340	11	1(30),10(31)
		6	343	11	9(31),2(32)
H.D. Dock	05	K	129	6(3)	3(21),3(22)
		1	126	4	2(31),2(32)
		2	125	4	3(31),1(32)
		3	126	4	2(31),2(32)
M. Goose	06	K	131	6(3)	1(21),5(22)
		1	131	4	1(32),3(33)
		2	130	4	2(32),2(33)
		3	130	4	2(32),2(33)

TABLE 6 (cont.)

PUPIL/TEACHER RATIO UNDER INTEGRATION PLAN

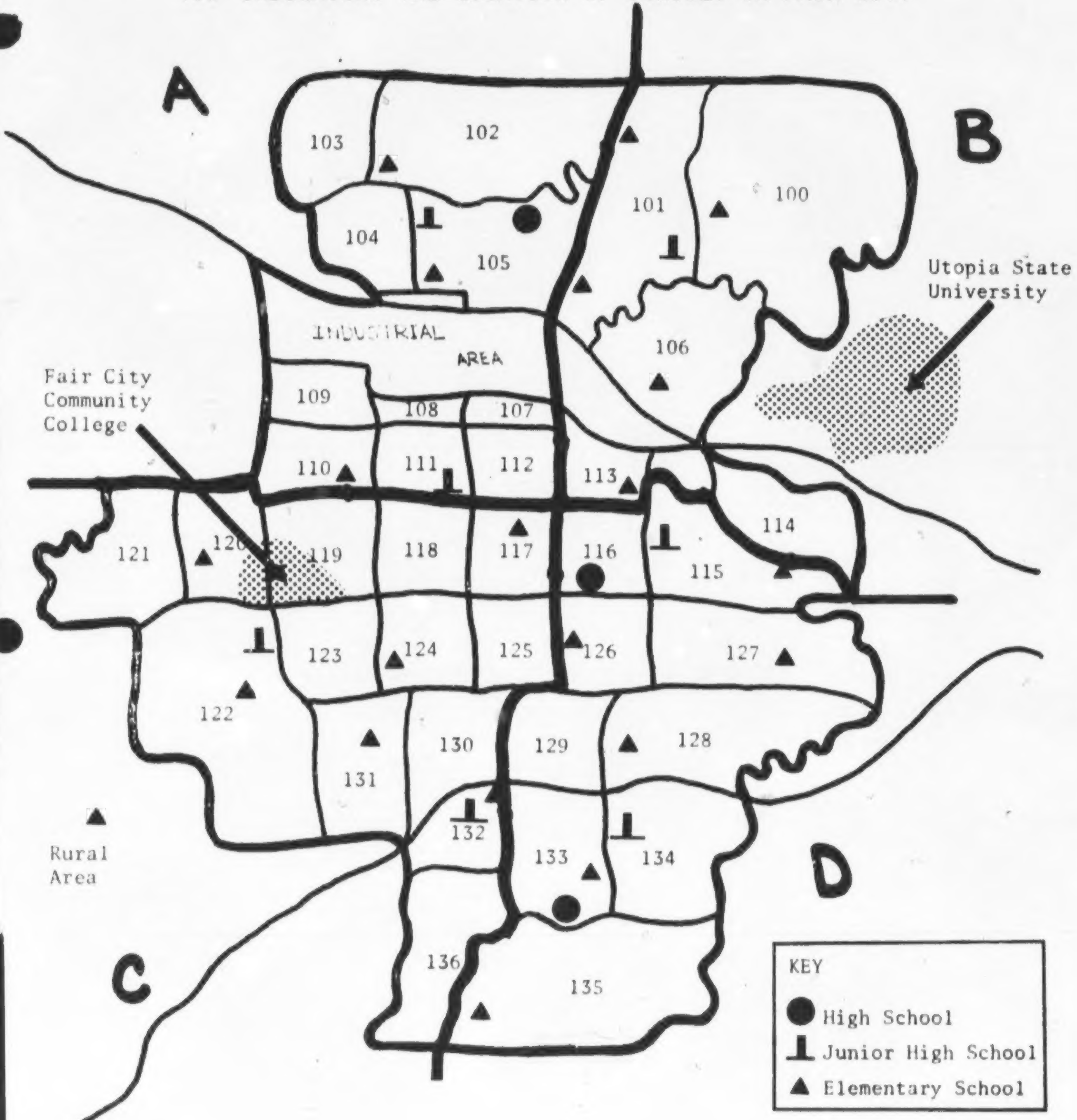
SCHOOL	INDEX	GRADE	NUMBER OF STUDENTS	NUMBER OF CLASSROOMS	PUPIL/TEACHER RATIO
Lamb	07	K	177	8(4)	7(22),1(23)
		1	179	6	1(29),5(30)
		2	180	6	6(30)
		3	182	6	4(30),2(31)
Muffet	08	K	80	4(2)	4(20)
		1	84	3	3(28)
		2	85		2(28),1(29)
		3	84	3	3(28)
J. Sprat	09	K	112	6(3)	2(18),4(19)
		1	123	5	3(25),2(24)
		2	120	5	5(24)
		3	120	5	5(24)
Calicocat	10	K	197	10(5)	3(19),7(20)
		1	207	7	3(29),4(30)
		2	204	7	6(29),1(30)
		3	202	7	1(28),6(29)
T. Blindmice	11	K	154	8(4)	6(19),2(20)
		1	180	6	6(30)
		2	160	5	5(32)
		3	157	5	3(31),2(32)
H.D. Diddle	12	K	149	6(3)	1(24),5(25)
		1	150	5	5(30)
		2	180	6	6(30)
		3	149	5	1(29),4(30)
O.K. Cole	13	4	300	10	10(30)
		5	300	10	10(30)
		6	296	10	4(29),6(30)
Shaftoe	14	K	178	8(4)	6(22),2(23)
		1	194	6	4(32),2(33)
		2	197	6	1(32),5(33)
		3	196	6	2(32),4(33)
M.M. Contrary	15	K	73	4(2)	3(18),1(19)
		1	84	4	4(21)
		2	88	4	4(22)
		3	75	3	3(25)
Inashoe	16	4	107	5	3(21),2(22)
		5	106	5	4(21),1(22)
		6	105	5	5(21)
S. Simon	17	4	278	9	1(30),8(31)
		5	275	9	4(30),5(31)
		6	275	9	4(30),5(31)

TABLE 6 (cont.)

PUPIL/TEACHER RATIO UNDER INTEGRATION PLAN

SCHOOL	INDEX	GRADE	NUMBER OF STUDENTS	NUMBER OF CLASSROOMS	PUPIL/TEACHER RATIO
Hubbard	18	4	233	8	7(29),1(30)
		5	230	8	2(28),6(29)
		6	229	8	3(28),5(29)
Sixpence	19	4	132	4	4(33)
		5	132	4	4(33)
		6	105	3	3(35)

MAP INDICATING THE LOCATION OF SCHOOLS IN FAIR CITY


A
B
C
D
103
102
101
100
104
105
106
INDUSTRIAL
AREA
Utopia State University
Fair City Community College
109
108
107
110
111
112
113
114
121
120
119
118
117
116
115
123
124
125
126
127
122
131
130
129
128
132
133
134
136
135
Rural Area
KEY
● High School
Junior High School
▲ Elementary School